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July - December 2024
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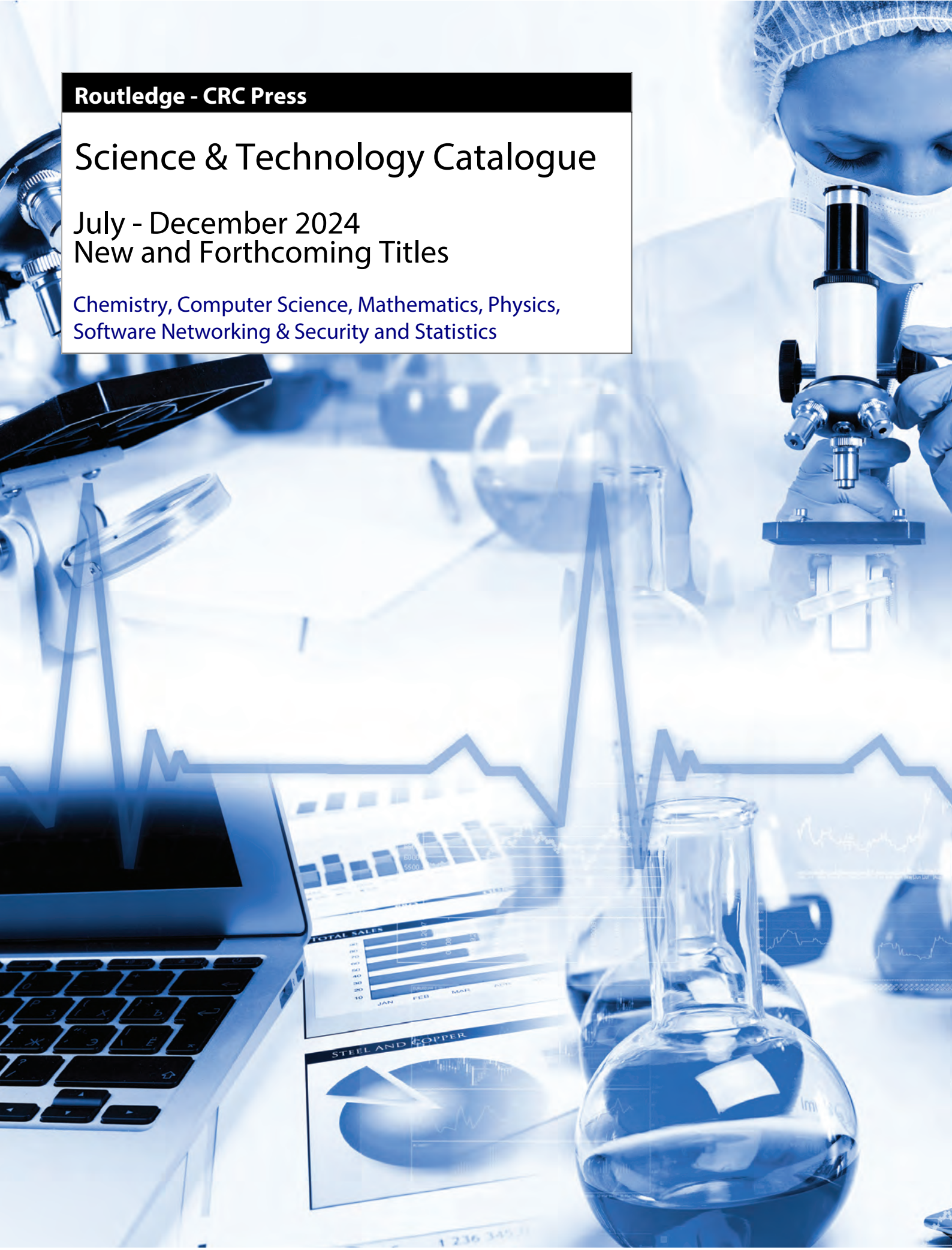

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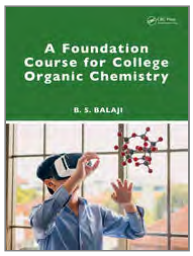
A Foundation Course for College Organic Chemistry



B. S. Balaji Jawaharlal Nehru University, India

To understand and improve the underlying principles that govern how organic reactions occur, A Foundation Course for College Organic Chemistry follows a brick-by-brick building approach. Emphasis is given to interrelating experimental facts and findings with predictions (mechanism) and inferences (results). Discussions focus on clarifying how complex organic reactions occur, which is based on electronegativity differences, movement of electrons (through σ framework or π bonds), addition or removal of atoms (hydrogen, halogens) or groups (hydroxy, amino).

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August 2024:268
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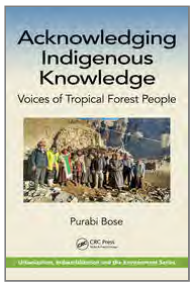
Acknowledging Indigenous Knowledge

Voices of Tropical Forest People



Purabi Bose SLU, Sweden

Series: Urbanization, Industrialization, and the Environment

This book explores how the landscapes in indigenous territories are rapidly changing due to increased global industrial demand. This deforestation and urbanization has isolated the Indigenous People from practising 'traditional ways of life.' Portrayed in the book are the Indigenous People's perspective of their Indigenous Knowledge about the enviornment, and why losing IK is a threat to humans, wildlife and nature. Insight is shared into why acknowledging IK as a science can help solve climate change, food and nutrition insecurity and increasing new types of pandemic, through evidence-based stories from Indigenous people.

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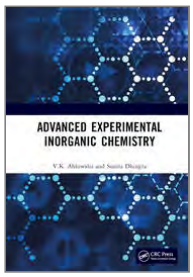
Advanced Experimental Inorganic Chemistry



V.K. Ahluwalia , Sunita Dhingra

This book discusses qualitative inorganic analysis, volumetric analysis, gravimetric analysis, and inorganic preparations. Print edition not for sale in South Asia (India, Sri Lanka, Nepal, Bangladesh, Pakistan or Bhutan)

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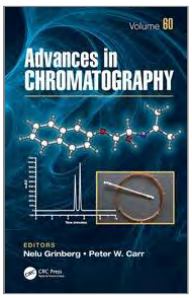

Edited by **Nelu Grinberg , Peter W. Carr**

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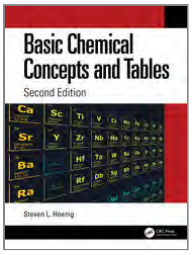
2ND EDITION

Basic Chemical Concepts and Tables



Steven L. Hoenig American Public University, Charles Town, WV, USA

Fully revised and expanded, the second edition of Basic Chemical Concepts and Tables is written as a quick reference to the many different concepts and ideas encountered in chemistry. The volume presents important subjects in a concise format that makes it a practical resource for any reader. Subjects include general chemistry, inorganic chemistry, organic chemistry, and spectral analysis. The new edition includes updated tables that are useful as for the interpretation of ultra-violet (UV), infra-red (IR), nuclear magnetic resonance (NMR) and mass spectroscopy (MS) spectra, and expanded sections devoted to the concept of isomers and polymer structures.

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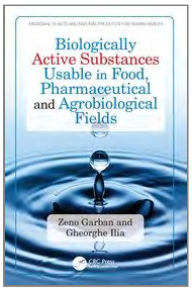
Biologically Active Substances Usable in Food, Pharmaceutical and Agrobiological Fields



Zeno Garban RATB, Romania**, Gheorghe Ilia** West University, Romania

Series: Medicinal Plants and Natural Products for Human Health

This concise text on biologically active substances of the food, pharmaceutical and agricultural industries presents data on natural compounds of vegetable and animal origin. Various nutrients in food, phytochemical and zoochemicals are discussed,including their uses for prophylactic, metaphylactic and therapeutic purposes in personalized medicine. Along with these compounds, prebiotics isolated by biotechnological methods from plant tissues are reviewed. Metabolism of nutrients and the biodegradation of xenobiotics are hot topics and access routes into the human body for the various biologically-active substances are covered.

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Biomolecules

Chemistry of Living System

V.K. Ahluwalia

Biomolecules, also known as molecules of life, are essential for sustaining life processes. This book presents a study of these crucial biological substances to explore their types, function, structure, biological role, and synthesis. The subject matter of this book also covers: Mucopolysaccharides Tertiary Structure of Proteins Caffeine Mechanism of Enzyme Action Biosythesis of Haemoglobin Print edition not for sale in South Asia (India, Sri Lanka, Nepal, Bangladesh, Pakistan or Bhutan)

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Biosimilars Development Strategies

Fast to Market Approaches

Sarfaraz K. Niazi Therapeutic Proteins International, LLC, USA

After 18 years since the first biosimilar was approved, a lot has changed, from the regulatory guidelines to the stakeholder perceptions about the safety and efficacy of biosimilars. However, the development costs remain high, preventing faster entry into markets with more than 200 choices. Analyzing the regulatory filings of all approved biosimilars in the US and EU, a deep analysis of the scientific principles, and continuous challenges to the regulatory authorities have made it possible to plan the development on a fast track.

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Loutfy H. Madkour Tanta University, Egypt

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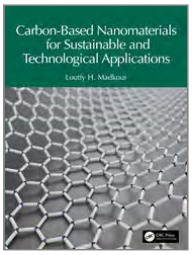
Carbon-Based Nanomaterials for Sustainable and Technological Applications



Loutfy H. Madkour Tanta University, Egypt

Carbon-Based Nanomaterials for Sustainable and Technological Applications covers the fundamentals of Carbon-based Nanomaterials (CNMs) and their potential for technological and industrial applications. Addressing recent advancements in technology and improvement in material synthesis, the book outlines how functionalized CNMs are used in nanobiotechnology, for active sorbent materials, and in pharmaceutical applications. Chapters cover macro-scale applications, biosensors and drug delivery and treatment in cancer and coronavirus diseases.

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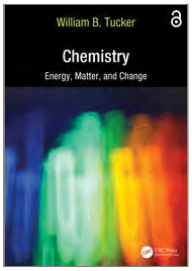
Chemistry

Energy, Matter, and Change



William B. Tucker

Providing a holistic overview of general chemistry and its foundational principles, this textbook is an essential accompaniment to students entering the field. It is designed with the reader in mind, presenting the historical development of ideas to frame and center new concepts as well as providing primary and summative sources for all topics covered. These sources help to provide definitive information for the reader, ensuring that all information is peer-reviewed and thoroughly tested. This textbook is aimed at an advanced high school or general college audience, aiming to engage students more directly in the work of chemistry.

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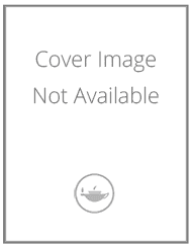
Chemistry and Biology of Beta Lactams



Bimal Krishna Banik PMU, Saudi Arabia**, Aparna Das**

Due to their medicinal activity and potential use as synthetic starting materials, studies on beta-lactams have increased significantly. This unique volume takes readers on a tour de force from the concept of antibiosis, to the serendipity of antibiotics, evolution of beta-lactam development, and the molecular biology of antibiotic resistance. These areas of research have culminated in a deeper understanding of microbiology, particularly in the area of bacterial cell wall synthesis and recycling. Considerable work has been performed by chemists and biologists to continue updating their findings about beta-lactam synthesis.

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Classical Mechanics

Tai L. Chow California State University, Stanislaus, Turlock, USA

The third edition of Classical Mechanics presents a complete account of the classical mechanics of particles and systems for physics students at the advanced undergraduate level. The textbook evolved from a set of lecture notes for a course on the subject taught for many years by the author at California State University, Stanislaus. It assumes the reader has been exposed to a course in calculus and a calculus-based general physics course. However, no prior knowledge of differential equations is required. Differential equations and new mathematical methods are developed in the text as the occasion demands.

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Click Chemistry

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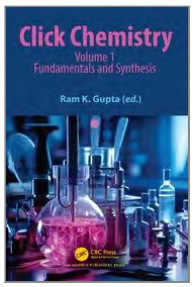

Edited by **Ram K. Gupta**

Click chemistry involves highly efficient, reliable, and stereoselective reactions that can synthesize new materials cost-effectively. The first volume entitled "Click Chemistry: Fundamentals and Synthesis" covers the fundamentals, mechanisms, kinetics, and various approaches to synthesizing new materials making it suitable for synthetic chemists and researchers working in nanoscience and technology. The main objective of this book is to provide information about current, state-of-the-art development in click chemistry as well as challenges.

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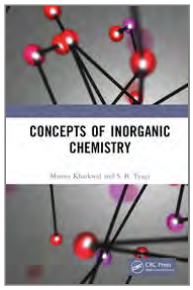
Concepts of Inorganic Chemistry



Mamta Kharkwal , S. B. Tyagi

Inorganic chemistry is an important branch of chemistry that impacts both our daily routine and several technological and scientific disciplines. The aim of this book is to incorporate the new advancements and developments in this field of study and to discuss their significance in our lives. A detailed discussion about the various aspects of inorganic chemistry is presented and the interpretation of structures, bonding, and reactivity of inorganic substances is also explored. Print edition not for sale in South Asia (India, Sri Lanka, Nepal, Bangladesh, Pakistan or Bhutan)

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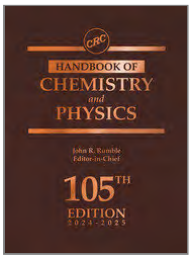

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Biodegradable Insulating Materials for Transformers

T. Mariprasath , Victor Kirubakaran , Perumal Saraswathi , Reddy Kumar Cheepati , Prakasha Kunkanadu Rajappa

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This book provides in-depth information about the latest trends in transformer insulation design. This practical guide is prepared from a hands-on perspective, offering readers valuable insights into the trends in liquid dielectrics for transformer applications.

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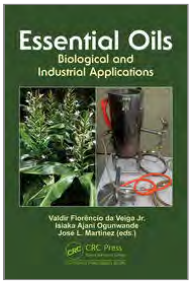
Essential Oils

Biological and Industrial Applications



Edited by **Valdir Florêncio da Veiga , Isiaka Ajani Ogunwande** Foresight Institute of Research and Translation, Nigeria**, José L. Martinez** Universidad de Santiago de Chile, Chile

Essential oils, renowned for their multifaceted properties, have been integral to the tapestry of human history, forging connections to our past by evoking memories of cherished places and the aromatic embrace of grandparents' kitchens. Beyond their nostalgic allure, these oils play a pivotal role in various industries, serving as functional compounds in food matrices, packaging, preservatives, and essential elements in plant protection—ranging from pesticides to antimicrobials and repellents. This book unfolds in ten chapters, presenting a collection of groundbreaking studies on the composition, biological, and pharmacological properties of essential oils.

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Fire Retardancy of Polymeric Materials

Edited by **Charles A. Wilkie , Alexander B. Morgan**
University of Dayton Research Institute

The third edition of Fire Retardancy of Polymeric Materials provides a single source for all aspects of this highly challenging field of applied research. This authoritative book covers design and non-fire requirements that drive how these materials are fire protected. This thoroughly revised new edition continues to offer comprehensive coverage of the scientific approach for those developing fire safe materials. It covers new topics such as bio-based materials, regulatory issues, recycling, newer flame retardant chemical classes, and more details on how to flame retard materials for specific market applications.

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Fluorescent Chemosensing and Bioimaging

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Edited by **Suban K. Sahoo** SVNIT, India

Fluorescent Chemosensing and Bioimaging provide detailed information on fluorescent chemosensor design strategies, sensing mechanisms, and potential applications. Fluorescent chemosensors are widely employed for the detection of environmentally and/or biologically important species because of their advantages of low cost, simplicity, high sensitivity, real-time monitoring, versatility, and high temporal and spatial resolution.

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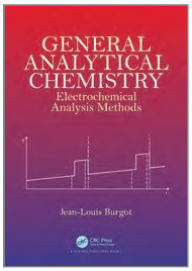

Jean-Louis Burgot

This book is devoted to the quantitative electrochemical methods of analysis in solution. A theoretical knowledge of each method is discussed. The methods are illustrated with several examples covering a wide range of types of analysis.

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Global Regulations of Medicinal, Pharmaceutical, and Food Products

Edited by **Faraat Ali** Department of Inspection &I Enforcement, Laboratory Services, Botswana Medicines Regulatory Authority**., Leo M.L. Nollet**

Medicine regulation demands the application of sound medical, scientific, and technical knowledge and skills, and operates within a legal framework. Regulatory functions involve interactions with various stakeholders (e.g., manufacturers, traders, consumers, health professionals, researchers, and governments) whose economic, social, and political motives may differ, making implementation of regulation both politically and technically challenging. This book discusses regulatory landscape globally and the current global regulatory scenario of medicinal products and food products comprehensively.

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Maureen M. Julian Virginia Polytechnic Institute and State University, Blacksburg, USA**, Carla Slebodnick , Francis T. Julian**

The Third Edition of Foundations of Crystallography with Computer Applications is a textbook for undergraduate and graduate students studying the solid state in chemistry, physics, materials science, geological sciences, and engineering. It takes a straightforward, logical approach to explaining how atoms are arranged in crystals and how crystal systems are related to each other. New to this edition is the inclusion of interactive starter programs in Python, which allow the students to focus on concepts and not treat crystallographic programs as 'black boxes.'

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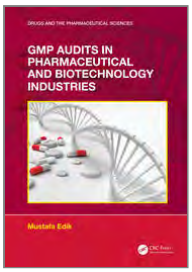

Mustafa Edik

Series: Drugs and the Pharmaceutical Sciences

The fact that GMP audits in the pharmaceutical and biotechnology industries have to be evaluated and with very limited resources has created a gap in this field. The lack of trained and qualified GMP auditors is on the rise in all organizations which are required to implement FDA, EMA, MHRA, WHO, TGA, PIC/S regulations. This volume is an essential reference source for those organizations operating in the field of health and presents the basic knowledge needed to perform audits.The author also provides useful tips and a selection of samples about GMP audits that are indispensable for professionals and health inspectors working in industry and health authorities.

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Green Chemistry in 21st Century and Beyond

V.K. Ahluwalia , Sunita Dhingra

With an emphasis on minimizing the use and generation of hazardous substances, Green Chemistry is a significant branch of Chemical Engineering. This book details the fundamentals associated with this field of study and focuses on designing products through renewable starting materials, recyclable chemicals, and benign synthesis. The use of green solvents, organic transformations, catalysts, and electrochemical synthesis are also discussed. Print edition not for sale in South Asia (India, Sri Lanka, Nepal, Bangladesh, Pakistan or Bhutan)

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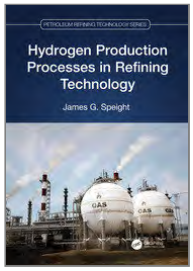

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Series: Petroleum Refining Technology Series

An industry expert details the importance and the different approaches to production of hydrogen in petroleum refining. The need for hydrogen is addressed and then the differences between the processes are detailed. The types of feedstock that can be used for each process is also explained. Relevant process data is provided, and process operations are fully described. This practical and accessible guide is written for managers, professionals and technicians as well as graduate students transitioning into the refining industry.

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Introduction to Organic and Medicinal Chemistry

Nathan Jack Keighley

Designed to be an undergraduate reference textbook for students of chemistry who aim to select degree modules geared towards medicinal chemistry.

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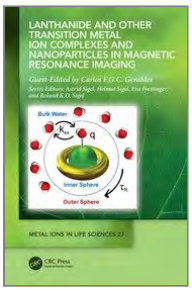
Lanthanide and Other Transition Metal Ion Complexes and Nanoparticles in Magnetic Resonance Imaging



Edited by **Carlos F.G.C. Geraldes** University of Coimbra, Portugal

Series: Metal Ions in Life Sciences Series

Since the development of the first clinical MRI contrast agent, Gd(DTPA) (or Magnevist®) in the early 1980s, another three linear and three macrocyclic (eg. Gd(DOTA) (Dotarem®) have been introduced in the clinic and inspired a huge number of researchers worldwide to perform preclinical research to obtain contrast agents for many kinds of clinical applications, which are described in this book. The most current research has been assembled here and can be used by the scientific community to continue increasing the relevance of metal-containing molecules and nanomaterials for MRI-based diagnosis and thus increase the practical use of these systems.

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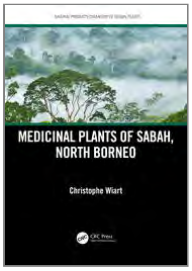
Medicinal Plants of Sabah, North Borneo



Christophe Wiart University Malaysia Sabah, Malaysia

Series: Natural Products Chemistry of Global Plants

Researchers in the field of natural product chemistry and pharmacology focus on discovering new drugs from medicinal plants. The medicinal plants of East Malaysia, many of which are found in the whole Asian and the Pacific, represent a vast array of resources that could be used for the discovery of drugs and the development of cosmetics as well as functional food. No other book focuses on the medicinal plants from this part of the globe in such depth.

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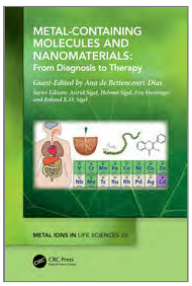
Metal-Containing Molecules and Nanomaterials

From Diagnosis to Therapy



Edited by **Ana de Bettencourt-Dias** University of Nevada, USA

Series: Metal Ions in Life Sciences Series

Since the discovery and successful deployment of salvarsan to treat syphilis, as well as cisplatin as a cancer drug, the field of metallodrugs has been flourishing. In addition to therapeutic applications, metals and metal-containing molecules have properties, such as an electrochemical or an optical signal, used to diagnose biologically relevant molecules or unravel cellular metabolism. Metals are part of the essential elements for life, and of increased attention in nutraceuticals.

CRC Press
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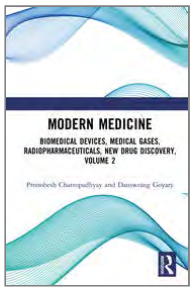
Modern Medicine

Biomedical Devices, Medical Gases, Radiopharmaceuticals, New Drug Discovery, Volume 2



Pronobesh Chattopadhyay Defence Research Laboratory, India**, Danswrang Goyary** Defence Research Laboratory, India

The present volume-2 of book Title "Book Title: Modern Medicine: Biomedical Device, Medical Gas, Radiopharmaceuticals, New Drug Discovery (Volume 2)" discusses the procedures of drug approval and regulatory requirements that must be met according to the United States Food and Drug Administration (FDA), the European Medical Agency (EMA), and the Central Drug Standard Control Organization (CDSCO). In the rapidly evolving landscape of modern medicine, groundbreaking innovations have emerged that are reshaping the way we approach healthcare.

CRC Press
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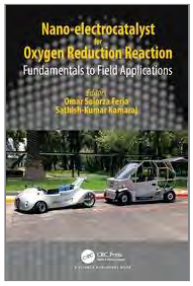
Nano-electrocatalyst for Oxygen Reduction Reaction

Fundamentals to Field Applications



Edited by **Omar Solorza Feria , Sathish-Kumar Kamaraj** Instituto Tecnológico El Llano Aguascalientes, Mexico

The book covers fundamental ORR reaction kinetics theories, tools, and techniques. It also explains the nano electrocatalysts for ORR made of noble, non-noble, and nanocarbon materials. Finally, the book explores the applications of PEM fuel cells and metal-air batteries.

CRC Press
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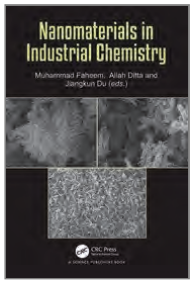
Nanomaterials in Industrial Chemistry



Edited by **Muhammad Faheem , Allah Ditta , Jiangkun Du**

This book provides a comprehensive exploration of nanomaterials, offering insights into their diverse morphologies and applications. Chapters delve into the industrial potential of nanocellulose-based aerogels, the future of light-driven and UV-photodetector materials, and the use of functionalized nanomaterials for wastewater restoration. It explores the pivotal role of nanobiotechnology in water purification and introduces nanopharmaceuticals as a promising frontier in clinical medicine.

CRC Press
July 2024:246
Hb: 978-1-032-36952-5: **$180**
eBook: 978-1-003-33464-4
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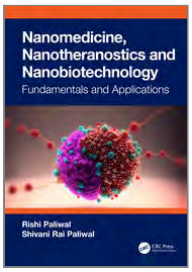
Nanomedicine, Nanotheranostics and Nanobiotechnology

Fundamentals and Applications



Rishi Paliwal , Shivani Rai Paliwal

The present book is divided into two sections. Section A (16 chapters) is dedicated to the exclusive book chapters related to Nanomedicine area such as History, regulatory, scale-up, regulatory toxicology aspects of nanomedicine. Section B (10 chapters) comprised of chapters in the area of nanotheranostics and applications of nanobiotechnology.

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August 2024:392
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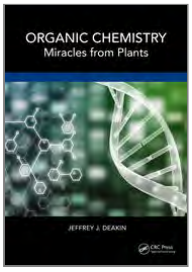
Organic Chemistry

Miracles from Plants



Jeffrey John Deakin

Human benefit from the organic chemistry of plants is incalculable in terms of health, food, comfort and security. Indeed, the future well-being of humanity rests in significant measure upon a responsible relationship with the plant kingdom in order to re-establish balance in the Earth's natural environmental systems. In a highly readable volume, Organic Chemistry: Miracles from Plants presents many fascinating points of entry to the organic chemistry of a wide range of crucially-important, naturally-occurring, chemical substances which are derived from plants.

CRC Press
May 2024:276
Pb: 978-1-032-66490-3: **$58.99**
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eBook: 978-1-032-66492-7
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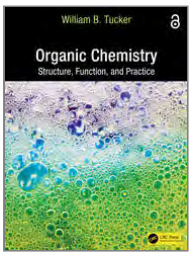
Organic Chemistry

Structure, Function, and Practice



William B. Tucker

With a focus on organic chemistry students at all levels, problems are incorporated into the body of the text in an effort to engage students more directly in chemistry. Arrowless mechanisms seek to help students develop their electron-pushing skills and intuition through repeated practice. By design this volume is more actively engaging than a traditional textbook. In addition, the historical development of ideas is presented to help frame and center these concepts for the reader. Primary and summative sources are given for all topics covered. The sources provide definitive information for the reader and ensure that all information is supported by peer-reviewed, experimental sources.

CRC Press
August 2024:336
Pb: 978-1-032-76605-8: **$140**
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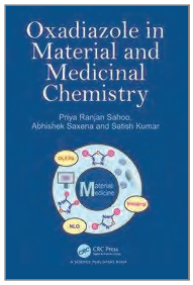
Oxadiazole in Material and Medicinal Chemistry



Priya Ranjan Sahoo , Abhishek Saxena , Satish Kumar
University of Delhi, India

The book "Oxadiazole in Material and Medicinal Chemistry" is based on the utility of organic motifs that contain oxadiazole units in their molecular architecture. Most of the common and alternate ways to synthesize oxadiazole-based probes have been discussed. The book also features some of the advanced applications of such organic motifs in liquid crystals, OLEDs, imaging agents, and medicines.

CRC Press
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Hb: 978-1-032-47066-5: **$150**
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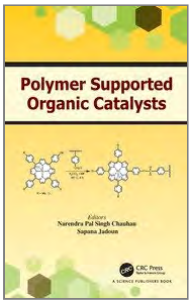
Polymer Supported Organic Catalysts



Edited by **Narendra Chauhan , Sapana Jadoun**

Polymer-supported organic catalysts are largely insoluble in most reaction solvents, which allows for easy recovery and recycling of the catalysts. They are generally stable, readily available, and environmental friendly, so they have attracted the interest of many synthetic chemists in the industrial and academic fields. In this book, different types of polymer supported catalysts based on peptides, polystyrene, polyethers, poly(acrylic acid), poly(ethylene imine), poly(2-oxazoline), poly(isobutylene), poly(norbornene), etc., as well as metals are included with their synthetic organic synthesis applications.

CRC Press
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Perspectives of Quorum Quenching in New Drug Development

Edited by **Naga Raju Maddela** UTM, Ecuador**, Venkataramana Thiriveedi** Duke University, USA**, Lodi Rathna Silviya** Agricultural Food Science Department, China

Antibiotic resistance in pathogen microorganisms is one of the major global concerns nowadays, especially the formation of biofilms. Quorum quenching has been practically used to control biolfim growth, and this indicates a promosing hope for the development of new drugs for control of biofilm forming pathogens. This book provides a single source of information about two issues, including the biology of quorum sensing and quorum quenching and the perspectives of quorum quenching in new drug development. The text covers the latest literature from the last ten years and insights into quorum quenching and its need in medicine as an anti-virulence strategy.

CRC Press
May 2024:252
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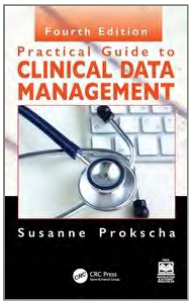
4TH EDITION

Practical Guide to Clinical Data Management



Susanne Prokscha Jazz Pharmaceuticals, CA, USA

The management of clinical data, from its collection during a trial to its extraction for analysis, has become critical in preparing a regulatory submission and obtaining approval to market a treatment. Groundbreaking on its initial publication nearly fourteen years ago, and evolving with the field in each iteration since then, this latest volume includes revisions to all chapters to reflect the recent updates to ICH E6, Good Clinical Practices, electronic data capture and interactive response technologies.

CRC Press
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4TH EDITION

Pharmaceutical Dosage Forms and Drug Delivery

Revised and Expanded

Ram I. Mahato University of Nebraska Medical Center, Omaha, USA**, Ajit S. Narang** Genentech Inc, San Francisco, USA**, Virender Kumar**

Completely revised and updated, this fourth edition elucidates the principles of pharmaceutics, biopharmaceutics, dosage form design, and drug delivery – including emerging new biotechnology-based treatment modalities. The authors integrate aspects of physical pharmacy, chemistry, biology, and biopharmaceutics into drug delivery.

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4TH EDITION

Practical Lubrication for Industrial Facilities

Kenneth Bannister

Series: River Publishers Series in Energy Engineering and Systems

Practical Lubrication for Industrial Facilities, Fourth Edition, is a blueprint manual for any person, department, or corporation wanting to acquire practical working knowledge in the field of industrial lubrication study and application. The book is designed to deliver the basic building blocks required to implement a practical and meaningful lubrication management program that meets and exceeds the requirements set out in the aforementioned ISO 55001 and ICML 55 standards, designed to truly define "World Class."

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Hb: 978-8-770-22745-2: **$234.5**
eBook: 978-1-032-63236-0
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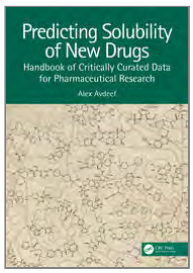
Predicting Solubility of New Drugs

Handbook of Critically Curated Data for Pharmaceutical Research



Alex Avdeef

In pharmaceutical research, solubility plays a key part in the assessment of pharmacokinetic risks. Poor drug absorption, reduced efficacy, excessive metabolism and adverse reactions are frequently related to issues of drug solubility. During early discovery research at pharmaceutical companies, many thousands of molecules are considered. Most are rejected due to perceived unfavorable properties. Here the author uses the so-called Wiki-pS0TM database which forms the backbone of this unique handbook. Also discussed is the emerging class of therapeutically-promising research molecules called PROTACs (proteolysis-targeting chimeras), showing a propensity for 'undruggable' targets.

CRC Press
May 2024:1730
Hb: 978-1-032-61767-1: **$325**
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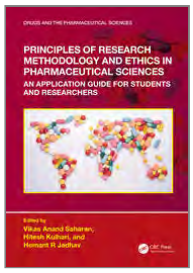
Principles of Research Methodology and Ethics in Pharmaceutical Sciences

An Application Guide for Students and Researchers



Edited by **Vikas Anand Saharan** Sardar Bhagwan Singh University, India**, Hitesh Kulhari** Central University of Gujarat, Gujarat**, Hemant R Jadhav** BITS Pilani, Rajasthan

Series: Drugs and the Pharmaceutical Sciences

This volume presents pharmaceutical research through theoretical concepts, methodologies and ethical issues. It fulfils publication ethics course work requirements for students. Chapters have been designed to cater for the curriculum requirements of universities globally. This serves as a guide on how to apply concepts in designing experiments and transforming laboratory research into actual practice.

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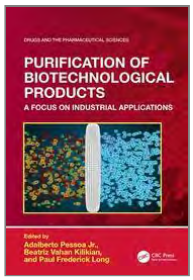
Purification of Biotechnological Products

A Focus on Industrial Applications



Edited by **Adalberto Pessoa Jr** University of Sao Paulo, Brazil**, Beatriz Vahan Kilikian , Paul Long** King's College London, United Kingdom

Series: Drugs and the Pharmaceutical Sciences

This outstanding text focuses on providing professionals and students working in the field of pharmaceutical and biotechnology with the background necessary for development of a product or process and with the necessary rigor required by federal regulatory agencies in the pharmaceutical industry. The material will enable teachers, lecturers and professors in biotechnology to prepare courses on basic concepts and applications for purification of biotechnological products with industrial interest.

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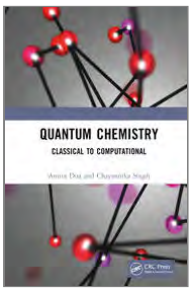
Quantum Chemistry

Classical to Computational



Amita Dua , Chayannika Singh

This book discusses major developments of quantum mechanics from classical to computational chemistry. The book is student and user friendly and includes exhaustive derivations, mathematical proofs, and theorems. A series of solved numerical have been added after each topic to have a better understanding of the subject. It will be helpful to Chemistry students at undergraduate and postgraduate level, as well for those appearing in various competitive examinations. Print edition not for sale in South Asia (India, Sri Lanka, Nepal, Bangladesh, Pakistan or Bhutan)

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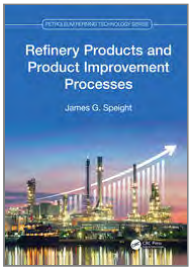
Refinery Products and Product Improvement Processes



James G. Speight CD & W Inc., Laramie, USA

Series: Petroleum Refining Technology Series

An industry expert details the different approaches to product improvement processes in refining technology. The differences between the processes are presented as well as the types of feedstock that can be used for each process. Relevant process data is provided, and process operations are fully described. This practical and accessible guide is written for managers, professionals and technicians as well as graduate students transitioning into the refining industry.

CRC Press
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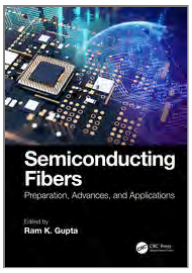
Semiconducting Fibers

Preparation, Advances, and Applications



Edited by **Ram K. Gupta** Pittsburg State University

This book is a comprehensive study of the properties and emerging applications of semiconducting fibers. These nanomaterials have unique optoelectronic properties: they are flexible, one-dimensional, and lightweight, and can grow in bulk, thin films, and nano-dimensions (0D, 1D, 2D, 3D). Written by experts from around the world, this book covers the fundamentals of semiconducting fibers, their fabrication, and emerging applications in electronics, optoelectronics, energy, and healthcare. Various approaches to fabricating semiconducting fibers, their characteristics, and the working principles of nano-dimensional devices are covered.

CRC Press
October 2024:304
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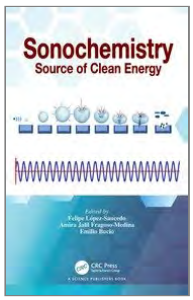
Sonochemistry

Source of Clean Energy



Edited by **Felipe López-Saucedo** Dept of Radiation Chem. , UNAM**, Amira Jalil Fragoso-Medina , Emilio Bucio** National Uni. of Mexico

This book explores the most pertinent aspects and advancements in sonochemistry, dedicating nine chapters to fundamentals, synthesis methods, and applications. Covering ultrasound as the primary energy source, the initial chapters cover the interaction of ultrasound waves with matter and its diverse applications across various fields. The text further delves into the synthesis of nanomaterials and nanocomposites under varying reaction conditions. Finally, the book examines specific topics, including the application of sonochemistry in wastewater treatment, catalysts, sensors, meat processing, and food packaging.

CRC Press
August 2024:252
Hb: 978-1-032-21298-2: **$180**
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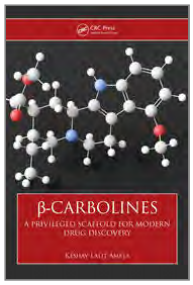
β-Carbolines

A Privileged Scaffold for Modern Drug Discovery



Edited by **K.L. Ameta, Ph.D.** Mody University of Science and Technology, Rajasthan, India

β-Carbolines: A Privileged Scaffold for Modern Drug Discovery provides a summary of methods for the synthesis of various natural products engineered with the diverse β-carboline scaffold and their biological evaluation. β-Carboline and its derivatives have generated considerable interest in recent years for their versatile properties in chemistry and pharmacology. This is due to their ability to act as agonists to benzodiazepine receptors, hydroxy serotonin receptors, and intercalate into DNA, to inhibit CDK, Topisomerase, and monoamine oxidase enzymes.

CRC Press
October 2024:328
Hb: 978-1-138-48238-8: **$220**
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Supramolecular Synthons in Crystal Engineering of Pharmaceutical Properties

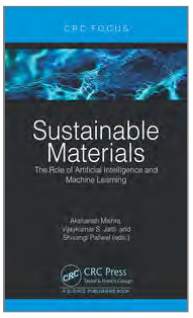
Ashwini Kumar Nangia University of Hyderabad, School of Chemistry Hyderabad, India

This comprehensive resource skillfully consolidates Crystal Engineering, the design of organic solids, and Supramolecular Synthons (i.e. structural hydrogen bond units) to achieve desired Pharmaceutical Properties, including solubility, dissolution, bioavailability, permeability, particle size, tableting, hydration, and mechanical strength. Covering 30 years of crystal engineering developments and pharmaceutical applications, this book will be a single and complete resource for supramolecular and structural chemists, the crystal engineering community, pharmaceutical scientists, and industrial researchers.

CRC Press
October 2024:200
Hb: 978-1-032-19611-4: **$220**
* For **full contents** and more information, visit: **www.routledge.com/9781032196114**

Sustainable Materials

The Role of Artificial Intelligence and Machine Learning



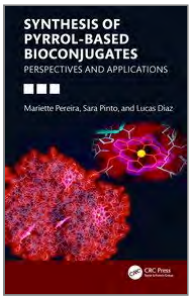
Edited by **Akshansh Mishra** Politecnico di Milano, Italy**, Vijaykumar S Jatti** Symbiosis International (Deemed) Uni, India**, Shivangi Paliwal** University of Kentucky, USA

The book explores the use of AI and ML techniques for the design, characterization, and development of prediction analysis of sustainable polymer composites. It covers topics such as stress distribution analysis, microstructure evaluation, concrete with industrial wastes, cheminformatics, crash analysis, optimization of welding processes, dimensional deviation classification, mechanical property estimation, and surface roughness classification, showcasing the potential of AI and ML in material science for sustainable development.

CRC Press
October 2024:214
Hb: 978-1-032-56852-2: **$160**
* For **full contents** and more information, visit: **www.routledge.com/9781032568522**

Synthesis of Pyrrol-based Bioconjugates

Perspectives and Applications

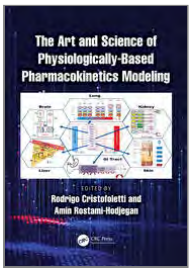


Mariette M. Pereira , Sara M.A. Pinto , Lucas D. Dias

Over the last years, the use of bioconjugation as strategy for development of more specific and directed drugs has been widely researched. For optimization of efficiency of tetrapyrrolic macrocycles efficiency as therapeutic molecules, it is relevant to promote their linking to biomolecules capable of targeting altered cells. There is no book available that combines structural modification of biomolecules and polymers with pyrrole-based compounds. This book would be of great interest for academicians, industrialists, under-graduate and graduate students of Chemistry, Biosciences and Pharmacy.

CRC Press
June 2024:160
Hb: 978-0-367-63457-5: **$120**
eBook: 978-1-003-11926-5
* For **full contents** and more information, visit: **www.routledge.com/9780367634575**

The Art and Science of Physiologically-Based Pharmacokinetics Modeling



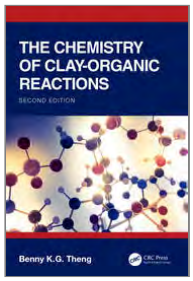
Edited by **Rodrigo Cristofoletti** University of Florida, USA**, Amin Rostami-Hodjegan** The University of Manchester, UK

This state of the art text describes the science behind the system and drug-dependent components of PBPK models, its applications in translational and regulatory science e.g. guiding drug discovery and development, and supporting precision medicine initiatives. In order to incorporate the state-of-the-art knowledge, each chapter is written by leaders in the field and illustrated by clear case studies.

CRC Press
July 2024:356
Hb: 978-0-367-46887-3: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9780367468873**

2ND EDITION

The Chemistry of Clay-Organic Reactions

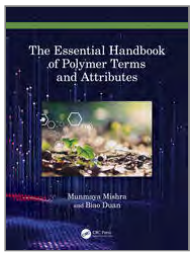


Benny K.G Theng

This book provides a comprehensive and critical summary of the vast literature on the interactions of clay minerals with organic molecules, including reaction mechanisms, and bonding modes together with their practical and industrial applications. The reader will gain an insight into the formation and properties of complexes between clay minerals and a variety of organic compounds, and the use of such complexes as sorbents and carriers of organic pollutants, pesticides, dyes, and pharmaceuticals. The book is intended for environmental and industrial chemists, organic geochemists, and soil scientists, and will appeal to academics, researchers, industry professionals, and graduate students.

CRC Press
May 2024:330
Hb: 978-0-367-53038-9: **$200**
eBook: 978-1-003-08024-4
* For **full contents** and more information, visit: **www.routledge.com/9780367530389**

The Essential Handbook of Polymer Terms and Attributes



Munmaya K Mishra , Biao Duan

This book will provide a broad knowledge of polymer science in an easy way ("Advanced Polymer Science in a Nutshell") by bringing polymer terms and attributes together in one place to facilitate idea generation for researchers and students embarking on projects related to a specific field of polymer science. The author covers important terms, from A to Z, associated with the field of "Polymers" and related area in a concise manner. This book will be a valuable resource for academic and industrial researchers such as chemists, polymer scientists, chemical engineers, pharmaceutical scientists, biomedical scientists, biotechnologists, product formulators, and materials scientists.

CRC Press
July 2024:280
Hb: 978-0-367-75169-2: **$200**
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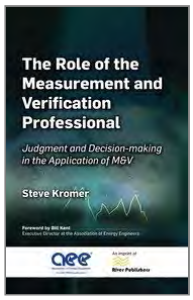
The Role of the Measurement and Verification Professional

Judgment and Decision-making in the Application of M&V



Steve Kromer

Series: River Publishers Series in Energy Management

Measurement and verification (M&V) is the accounting system for energy management. Implementing M&V as a professional requires both a broad understanding of concepts and contexts and an awareness of the fundamental tools used in estimating impacts of energy management. This book will assist those seeking to become M&V professionals by establishing the framework within which to conduct successful M&V.

River Publishers
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Hb: 978-8-770-04105-8: **$185**
eBook: 978-1-003-49819-3
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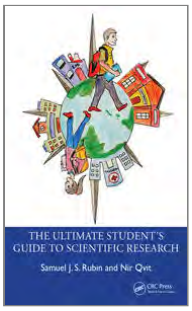
The Ultimate Student's Guide to Scientific Research



Samuel J. S. Rubin , Nir Qvit

A scientific career is a long and winding or often circuitous journey. Many key factors come together for the journey to go smoothly and produce a positive outcome, however that may be defined individually. This book addresses numerous aspects of the scientific career path, including but not limited to building a strong knowledge base and foundational skills; choosing and applying to advanced degree programs; composing winning research proposals and grants; writing major types of papers and reports; collaborative research programs both with academics and industry; the process of conducting and completing research projects; career advancement; and many more topics.

CRC Press
September 2024:176
Hb: 978-1-032-29387-5: **$100**
* For **full contents** and more information, visit: **www.routledge.com/9781032293875**

Zinc

Early Development, Applications, and Emerging Trends

Edited by **Ethirajan Sukumar , Krishnamurthy Vinothkumar** VPRO Biotech, India**, Annamalai Manickavasagan** University of Guelph, Canada

Zinc: Early Development, Applications and Emerging Trends is a comprehensive book covering various aspects of the metallic element zinc that has significant role in the growth and survival of humans. The United Nations Organization has aptly declared it as a 'Life Saving Material' since it helps in overcoming infections and strengthening immune system.

CRC Press
May 2024:316
Hb: 978-1-032-53521-0: **$150**
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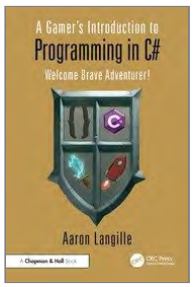
A Gamer's Introduction to Programming in C#

Welcome Brave Adventurer!



Aaron Langille

The first in an ongoing series designed to take readers from zero experience to writing their own video games and interactive digital experiences using industry standard languages and tools, this book is a great way to turn a love of video games into a new love of programming. It teaches the coding ins-and-outs of how we keep track of high scores, what video game heroes and loot boxes are made of, how the dreaded RNG or, random number generation works, and much, much more. Engaging and concise, this book is appealing to both a general readership as well as course convenors and students of programming.

Chapman & Hall
August 2024:348
Pb: 978-1-032-39122-9: **$59.99**
Hb: 978-1-032-39123-6: **$150**
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2ND EDITION

A Short History of Circuits and Systems

Edited by **Franco Maloberti , Anthony C. Davies , Yongfu Li , Fidel Makatia , Hanho Lee , Fakhrul Zaman Rokhani**

After an overview of major scientific discoveries of the 18th and 19th centuries, which created electrical science as we know and understand it and led to its useful applications in energy conversion, transmission, manufacturing industry and communications, this Circuits and Systems History book fills a gap in published literature by providing a record of the many outstanding scientists, mathematicians and engineers who laid the foundations of Circuit Theory and Filter Design from the mid-20th Century.

River Publishers
September 2024:460
Hb: 978-8-770-04224-6: **$150**
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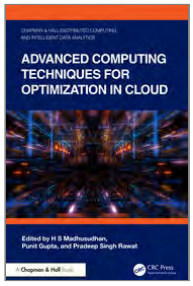
Advanced Computing Techniques for Optimization in Cloud



Edited by **H S Madhusudhan** Vidyavardhaka College of Engineering, India**, Punit Gupta , Pradeep Singh Rawat**

Series: Chapman & Hall/Distributed Computing and Intelligent Data Analytics

This book focuses on the current trends in research and analysis of virtual machine placement in a cloud data center. It discusses the integration of machine learning models and meta-heuristic approaches for placement techniques. Taking into consideration the challenges of energy-efficient resource management in cloud data centers, it emphasizes upon computing resources being suitably utilised to serve application workloads in order to reduce energy utilisation, while maintaining apt performance. This book provides information on fault-tolerant mechanisms in the cloud and provides an outlook on task scheduling techniques.

Chapman & Hall
September 2024:280
Hb: 978-1-032-60007-9: **$180**
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Advanced Techniques and Applications of Cybersecurity and Forensics

Edited by **Keshav Kaushik** UPES, Dehradun, India**, Mariya Ouaissa , Aryan Chaudhary** Chief Scientific Advisor, Bio Tech Sphere Research, India

Series: Emerging Technologies

The book showcases how advanced cybersecurity and forensic techniques can be applied to various computational issues. It further covers the advanced exploitations tools that are used in the domain of ethical hacking and penetration testing.

Chapman & Hall
July 2024:324
Hb: 978-1-032-47957-6: **$160**
* For **full contents** and more information, visit: **www.routledge.com/9781032479576**

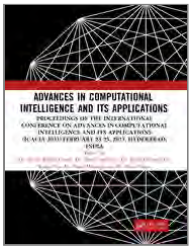
Advancement of Intelligent Computational Methods and Technologies

Edited by **O.P. Verma , Seema Verma , Thinagaran Perumal**

The compiled volume originates from the notable contributions presented at the 1st International Conference on Advancementof Intelligent Computational Methods and Technologies (AICMT2023), which took place in a hybrid format on June 27, 2023,at Delhi Technical Campus, Greater Noida, Uttar Pradesh, India. This comprehensive collection serves as an exploration intothe dynamic domain of intelligent computational methods and technologies, offering insights into the latest and upcoming trends in computation methods.

CRC Press
May 2024:206
Pb: 978-1-032-78445-8: **$170**
eBook: 978-1-003-48790-6
* For **full contents** and more information, visit: **www.routledge.com/9781032784458**

Advances in Computational Intelligence and Its Applications



Edited by **Sheikh Fahad Ahmad , Shadab Siddiqui , Rajib Debnath , Kakali Das , Figlu Mohanty , Sumit Hazra**

It is with great pleasure and enthusiasm that we welcome you to the International Conference on Advances in Computational Intelligence and its Applications (ICACIA-2023). In the ever-evolving landscape of technology, computational intelligence stands as a cornerstone, shaping the future of diverse fields and industries.

CRC Press
June 2024:370
Pb: 978-1-032-78612-4: **$52.95**
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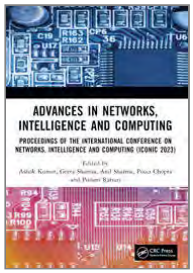
Advances in Networks, Intelligence and Computing

Proceedings of the International Conference On Networks, Intelligence and Computing (ICONIC 2023)



Edited by **Ashok Kumar , Geeta Sharma , Anil Sharma , Pooja Chopra , Punam Rattan**

Series: Conference Proceedings Series on Intelligent Systems for Engineering Designs

The year 2023 marks the 100th birth anniversary of E.F. Codd (19 August 1923 - 18 April 2003), a computer scientist, who while working for IBM invented the relational model for database management, the theoretical basis for relational databases and relational database management systems. He made other valuable contributions to computer science but the relational model, a very influential general theory of data management, remains his most mentioned, analyzed and celebrated achievement.

CRC Press
May 2024:844
Pb: 978-1-032-55387-0: **$52.95**
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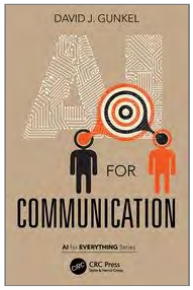
AI for Communication



David J. Gunkel Northern Illinois University Dekalb, IL 60115

Series: AI for Everything

AI for Communication offers an engaging exploration into the diverse applications of AI within the realm of communication. By bridging the gap between the scientific and engineering realms of artificial intelligence and communication, this book reveals how AI, since its inception during the Dartmouth Summer workshop of 1956, has inherently been a science of communication. Exploring key advancements such as machine translation, natural language processing, large language models, computational creativity, and social robotics, this book shows how these innovations not only disrupt, but also actively transform, human communication.

CRC Press
October 2024:200
Pb: 978-1-032-57170-6: **$29.99**
Hb: 978-1-032-58041-8: **$160**
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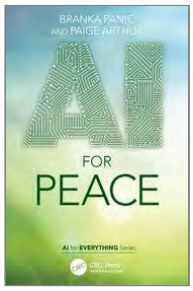
AI for Peace



Branka Panic , Paige Arthur

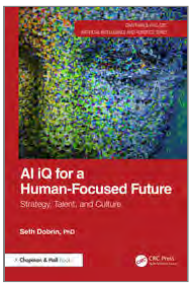
Series: AI for Everything

An increasingly relevant topic in the peacebuilding field, this book acts as an essential primer for introducing peacebuilders to the latest advancements in emerging technologies and will act as guide for future practice. It is also useful for those in data science and AI fields, raising awareness of the impacts of their work beyond bias and transparency. The book would also be a topical addition to undergraduate and postgraduate courses on digital peacebuilding, peacetech, international relations, tech in development, and humanitarian action.

CRC Press
April 2024:112
Pb: 978-1-032-41837-7: **$29.99**
Hb: 978-1-032-41838-4: **$160**
eBook: 978-1-003-35998-2
* For **full contents** and more information, visit: **www.routledge.com/9781032418377**

AI iQ for a Human-Focused Future

Strategy, Talent, and Culture



Seth Dobrin

Series: Chapman & Hall/CRC Artificial Intelligence and Robotics Series

AI iQ for a Human-Focused Future: Strategy, Talent, and Culture offers a pioneering approach to integrating artificial intelligence (AI) and generative AI (GenAI) in business, emphasizing a business strategy first mindset over a technology-centric one.The book challenges the usual hype surrounding AI, advocating for a more realistic perspective. It delves into the evolution of AI, from traditional data science and machine learning to GenAI, all through the lens of strategic business application. Unlike other texts, it moves away from case studies, favoring practical, real-world advice from extensive field experience.

CRC Press
July 2024:264
Pb: 978-1-032-78203-4: **$44.95**
Hb: 978-1-032-78204-1: **$115**
eBook: 978-1-003-48672-5
* For **full contents** and more information, visit: **www.routledge.com/9781032782034**

AI, Blockchain, and Metaverse in Hospitality and Tourism Industry 4.0

Case Studies and Analysis

Edited by **Adel Ben Youssef** University Cote d'Azur, France**, Pushan Kumar Dutta** Amity University Kolkata**, Ruchi Doshi , Manohar Sajnani**

The book offers a critical exploration of the integration of AI, blockchain, and metaverse technology in the hospitality and tourism industry to investigate the potential of these technologies in revolutionizing the industry. This comprehensive work studies, with practical examples, how cutting-edge technologies of Industry 4.0 are transforming luxury industry into a high-touch, hyper-personalized metaverse. It explains how these technologies can be used to improve customer experience and operational efficiency in areas such as guest interaction, supply chain management, payment processing, and virtual stores.

Chapman & Hall
October 2024:344
Hb: 978-1-032-69632-4: **$190**
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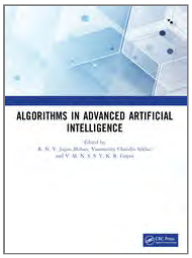
Algorithms in Advanced Artificial Intelligence

ICAAAI-2023



Edited by **R. N. V. Jagan Mohan , Vasamsetty Chandra Sekhar , V. M. N. S. S. V. K. R. Gupta**

The most common form of severe dementia, Alzheimer's disease (AD), is a cumulative neurological disorder because of the degradation and death of nerve cells in the brain tissue, intelligence steadily declines and most of its activities are compromised in AD.

CRC Press
July 2024:546
Pb: 978-1-032-86798-4: **$59.99**
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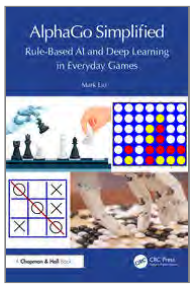
AlphaGo Simplified

Rule-Based AI and Deep Learning in Everyday Games



Mark Liu

What exactly is ML? How is it related to AI? Why is deep learning (DL) so popular these days? This book explains how traditional rule-based AI and ML work and how they can be implemented in everyday games such as Last Coin standing, Tic Tac Toe, or Connect Four. Game rules in these three games are easy to implement. As a result, readers will learn rule-based AI, deep reinforcement learning, and more importantly, how to combine the two to create powerful game strategies (the whole is indeed greater than the sum of its parts) without getting bogged down in complicated game rules.

Chapman & Hall
August 2024:410
Pb: 978-1-032-72212-2: **$59.95**
Hb: 978-1-032-72221-4: **$150**
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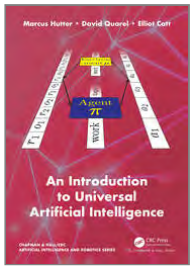
An Introduction to Universal Artificial Intelligence



Marcus Hutter , David Quarel , Elliot Catt

Series: Chapman & Hall/CRC Artificial Intelligence and Robotics Series

An Introduction to Universal Artificial Intelligence provides a gentle introduction to Universal Artificial Intelligence (UAI), a theory that provides a formal underpinning of what it means for an agent to act intelligently in a general class of environments. First presented in Universal Artificial Intelligence (Hutter, 2004), UAI presents a model in which most other problems in AI can be presented, and unifies ideas from sequential decision theory, Bayesian inference and information theory to construct AIXI, an optimal reinforcement learning agent that learns to act optimally in unknown environments.

Chapman & Hall
May 2024:516
Pb: 978-1-032-60702-3: **$74.95**
Hb: 978-1-032-60715-3: **$190**
eBook: 978-1-003-46029-9
* For **full contents** and more information, visit: **www.routledge.com/9781032607023**

Anatomy of Game Design

Tom Smith

Anatomy of Game Design takes some of the most popular and beloved games of all time and dissects them to see what makes them tick. By breaking down the systems and content of each game, the underlying systems of game design are laid bare. Each game is discussed in detail, using the same methods for each game. What are the verbs of the game that give the player agency? How do those verbs fit together to form a core loop that makes the game engaging? What are the systems that power the gameplay? What is the larger flow that makes the game interesting over and over again?

CRC Press
October 2024:288
Pb: 978-1-032-38738-3: **$49.99**
Hb: 978-1-032-38755-0: **$125**
* For **full contents** and more information, visit: **www.routledge.com/9781032387383**

Animation in Croatia

Zagreb School and Beyond

Midhat Ajanović Univ. West, Sweden

Series: European Animation

This book provides a comprehensive account of Croatian animation history, as well as an analysis of background factors such as political and social circumstances and cultural heritage that influenced the great international success of Croatian animators between the 1960s and 1980s. This book will be of great interest to academics, students, and professionals working and researching in the field of animation.

CRC Press
November 2024:208
Hb: 978-1-032-45147-3: **$100**
* For **full contents** and more information, visit: **www.routledge.com/9781032451473**

Applications of AI for Interdisciplinary Research

Edited by **Sukhpal Singh Gill** Queen Mary Uni London, UK.

The proliferation and successful deployment of AI algorithms are fueling these changes, which can be seen in fields as disparate as healthcare and emerging IoT applications.The intersection between multiple fields, including math, science, and healthcare, is where the most significant theoretical and methodological problems of AI may be found. In order to gather, integrate, and synthesise the many results and viewpoints in the connected domains, refer to it as interdisciplinary research. In light of this, the theory, techniques, and applications of machine learning and AI, as well as how they are utilised across disciplinary boundaries, are the main areas of this research topic.

CRC Press
September 2024:308
Hb: 978-1-032-73330-2: **$120**
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Applied Data Science and Smart Systems

Edited by **Jaiteg Singh , SB Goyal , Rajesh Kumar Kaushal , Naveen Kumar , Sukhjit Singh Sehra**

The Second International Conference on Applied Data Science and Smart Systems (ADSSS-2023) was held on 15-16 December 2023 at Chitkara University, Punjab, India. This multidisciplinary conference focussed on innovation and progressive practices in science, technology, and management.

CRC Press
July 2024:632
Pb: 978-1-032-74814-6: **$59.95**
* For **full contents** and more information, visit: **www.routledge.com/9781032748146**

Artificial Intelligence and Ethics

A Field Guide for Stakeholders

Tarnveer Singh

This book uncovers Artificial Intelligence, benefits it brings as well as the ethical dilemmas. The rise of AI and super-intelligent AI raises ethical issues. It will guide stakeholders such as scientists, ethicists and policymakers to consider the complexities AI brings and how to navigate these. AI brings complex ethical issues that need to be resolved and this books brings forward the benefits and drives readers away from potential risks around this new technology to help business growth. The book covers lots of case studies to prove both the potential benefits but also real-life examples of what can happen if risk is not managed effectively.

CRC Press
November 2024:304
Pb: 978-1-032-81526-8: **$59.99**
Hb: 978-1-032-82054-5: **$150**
* For **full contents** and more information, visit: **www.routledge.com/9781032815268**

Artificial Intelligence and Large Language Models

An Introduction to the Technological Future

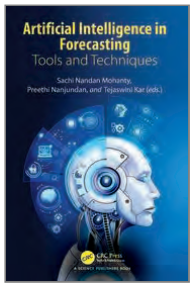
Kutub Thakur New Jersey City University, New Jersey, USA**, Helen G. Barker , Al-Sakib Khan Pathan**

Having been catapulted into public discourse in the last few years, this book serves as an in-depth exploration of the ever-evolving domain of Artificial Intelligence, Large Language Models and ChatGPT. It provides a meticulous and thorough analysis of Artificial Intelligence (AI), ChatGPT technology, and their prospective trajectories given the current trend, in addition to tracing the significant advancements that have materialized over time. Illustrated and organized in an accessible manner, this textbook contains particular appeal to students and course convenors at the undergraduate and graduate level, as well as a reference source for general readers.

Chapman & Hall
July 2024:290
Pb: 978-1-032-75480-2: **$64.95**
Hb: 978-1-032-75481-9: **$162**
* For **full contents** and more information, visit: **www.routledge.com/9781032754802**

Artificial Intelligence in Forecasting

Tools and Techniques



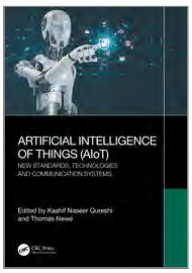
Edited by **Sachi Mohanty** VIT-AP University, India**, Preethi Nanjundan , Tejaswini Kar** KIIT deemed to be University, India

Can you forecast the future value by considering historical data? Accurate forecasting requires more than just plugging in historical data into models. Readers will find the latest techniques used by managers in business today, discover the importance of forecasting and learn how it is accomplished. And readers will develop the necessary skills to meet the increased demand for thoughtful and realistic forecasts.

CRC Press
July 2024:364
Hb: 978-1-032-50615-9: **$190**
eBook: 978-1-003-39929-2
* For **full contents** and more information, visit: **www.routledge.com/9781032506159**

Artificial Intelligence of Things (AIoT)

New Standards, Technologies and Communication Systems

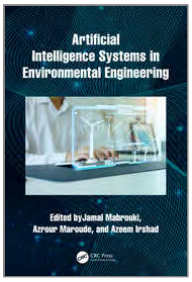


Edited by **Kashif Naseer Qureshi** Dept of Electronic & Computer Engineering, Uni. of Limerick, Ireland**, Thomas Newe** University of Limerick, Ireland

This book is devoted to the new standards, technologies, and communication systems for Artificial Intelligence of Things (AIoT) networks. Smart and intelligent communication networks have gained significant attention due to the combination of AI and IoT networks to improve human and machine interfaces and enhance data processing and services. AIoT networks involve the collection of data from several devices and sensor nodes in the environment. AI can enhance these networks to make them faster, greener, smarter, and safer. Computer vision, language processing, and speech recognition are some examples of AIoT networks.

CRC Press
April 2024:230
Hb: 978-1-032-55299-6: **$130**
eBook: 978-1-003-43001-8
* For **full contents** and more information, visit: **www.routledge.com/9781032552996**

Artificial Intelligence Systems in Environmental Engineering



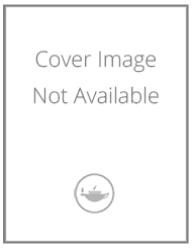
Edited by **Jamal Mabrouki , Azrour Maroude** Faculty of sciences and techniques Of Errachidia, Morocco**, Azeem Irshad** GOVT. GRADUATE COLLEGE ASGHAR MALL RAWALPINDI, HED, PAKISTAN

This book examines AI applications in a range of fields related to environmental engineering, process planning and manufacturing, monitoring and process system control, agriculture, civil engineering for sustainable development, water modelling approach and modelling of environmental systems, pollution management and control, and hydraulics engineering.

CRC Press
June 2024:112
Hb: 978-1-032-56585-9: **$170**
eBook: 978-1-003-43621-8
* For **full contents** and more information, visit: **www.routledge.com/9781032565859**

Augmenting Public Relations

An Introduction to AI and Other Technologies for PR



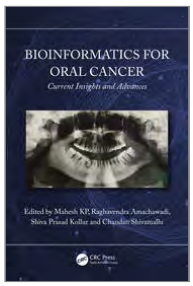
David Phillips

In recent years, the PR monitoring industry has deployed AI to search for content of interest by clients across a vast range of media. It throws up huge amounts of data to be managed. The book explores how such resources can be harnessed for intelligence gathering and activity deployment in easy-to-understand language

CRC Press
October 2024:222
Pb: 978-1-032-82658-5: **$54.95**
Hb: 978-1-032-83132-9: **$160**
* For **full contents** and more information, visit: **www.routledge.com/9781032826585**

Bioinformatics for Oral Cancer

Current Insights and Advances



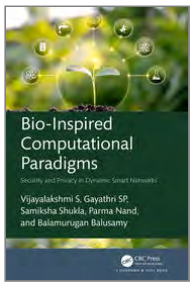
Edited by **Mahesh KP , Raghavendra Amachawadi , Shiva Prasad Kollur , Chandan Shivamallu**

Bioinformatics for Oral Cancer: Current Insights and Advances serves as a comprehensive guide offering a deep dive into the multifaceted landscape of oral cancer research and bioinformatics. Readers will uncover a wealth of knowledge, starting with foundational chapters introducing bioinformatics and establishing the backdrop of oral cancer. The book's keen focus extends to gene expression profiles and the intricacies of gene sequencing in the context of oral cancer progression.

CRC Press
May 2024:114
Hb: 978-1-032-62570-6: **$120**
eBook: 978-1-032-62571-3
* For **full contents** and more information, visit: **www.routledge.com/9781032625706**

Bio-Inspired Computational Paradigms

Security and Privacy in Dynamic Smart Networks



Edited by **Vijayalakshmi S , Gayathri SP** The Gandhigram Rural Institute Deemed to be University, India**, Samiksha Shukla** Christ University, India**, Parma Nand** Sharda University, India**, Balamurugan Balusamy**

Smart cities with various technological innovations have played an important role and influenced society as well. Due to voluminous data transactions within smart cities, security and privacy concerns need to be dealt with. Though taking care of safety and privacy is challenging, it is essential for a smart city to understand the bio-inspired computing paradigms. This book discusses the utilization of bio-inspired computing procedures for effective computational devices.

Chapman & Hall
July 2024:198
Hb: 978-1-032-16429-8: **$180**
* For **full contents** and more information, visit: **www.routledge.com/9781032164298**

2ND EDITION

Blender 2D Animation

The Complete Guide to the Grease Pencil

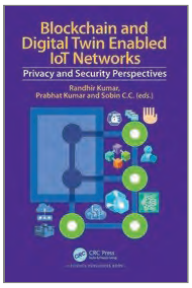
John M. Blain Toormina, New South Wales, Australia

This book describes how to access the Grease Pencil component in Blender and create 2D Animation within the Blender 3D environment. It is assumed that the reader has no previous knowledge of the Blender program and treats 2D Animation using the Grease Pencil as a standalone application. Grease Pencil is a component of the 3D modeling and animation program, Blender. Blender is a free open-source 3D Computer Graphics software toolset used for creating animated films, visual effects, art, 3D printed models, motion graphics, interactive 3D applications, virtual reality and computer games.

A K Peters/CRC Press
April 2024:216
Pb: 978-1-032-64979-5: **$74.95**
Hb: 978-1-032-63147-9: **$190**
eBook: 978-1-032-64983-2
* For **full contents** and more information, visit: **www.routledge.com/9781032649795**

Blockchain and Digital Twin Enabled IoT Networks

Privacy and Security Perspectives



Edited by **Randhir Kumar** SRM University, India**, Prabhat Kumar , Sobin C C** SRM University, India

This book emphasizes and facilitates a greater understanding of various security and privacy approaches using the advances in Digital Twin and Blockchain for data analysis using machine/deep learning, federated learning, edge computing and the countermeasures to overcome these vulnerabilities.

CRC Press
July 2024:234
Hb: 978-1-032-51751-3: **$150**
eBook: 978-1-003-40379-1
* For **full contents** and more information, visit: **www.routledge.com/9781032517513**

Blockchain as a Technology for Environmental Sustainability

Edited by **Maria José Sousa** ISCTE, Lisboa**, Tewabe Chekole Workneh** Uni. of Verona**, Halvor Holtskog** Norwegian University of Science and Technology, Norway

At a time of growing environmental concerns and an urgent need for sustainable solutions, the intersection of blockchain technology and environmental sustainability is emerging as a powerful force for positive change.

CRC Press
August 2024:264
Hb: 978-1-032-19797-5: **$180**
eBook: 978-1-003-26090-5
* For **full contents** and more information, visit: **www.routledge.com/9781032197975**

Blockchain for IoT Systems

Concept, Framework and Applications

Edited by **V Sridhar** Nitte Meenakshi Institute of Technology , India**, Sita Rani** GNDEC, Ludhiana**, Piyush Kumar Pareek , Pankaj Bhambri** GNDEC, Ludhiana**, Ahmed A Elngar** Beni-Suef Uni.

Series: Chapman & Hall/CRC Blockchain for Smart and Green Society

Blockchain and distributed-ledger technologies enable new modes of communication, synchronization, and transfer of value with a broad impact on IoT, Data Science, society, industry, commerce, and government. This book studies the potential impact of Blockchain and distributed-ledger technologies on IoT. It highlights the application of possible solutions in the domain of Blockchain and IoT system security, including cryptology, distributed systems, law, formal methods, code verification and validation, software, and systems metrics.

Chapman & Hall
September 2024:270
Hb: 978-1-032-60708-5: **$160**
* For **full contents** and more information, visit: **www.routledge.com/9781032607085**

Blockchains in 6G

A Standardized Approach To Permissioned Distributed Ledgers

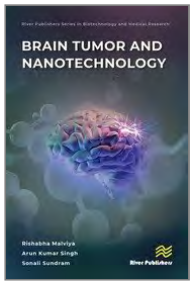
Mischa Dohler , Diego R. Lopez , Chonggang Wang

Series: River Publishers Series in Communications and Networking

Based on work done within ETSI, this comprehensive guide dives deep into the heart of blockchains and their imminent intersection with 6G. Whether you're a tech enthusiast or an industry expert, this book promises to enlighten, engage, and inspire, drawing you into the exciting intersection of 6G and blockchains.

River Publishers
June 2024:390
Hb: 978-8-770-04094-5: **$132**
eBook: 978-1-003-49813-1
* For **full contents** and more information, visit: **www.routledge.com/9788770040945**

Brain Tumor and Nanotechnology



Rishabha Malviya , Arun Kumar Singh , Sonali Sundram

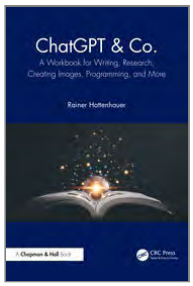
Series: River Publishers Series in Biotechnology and Medical Research

Brain Tumors and Nanotechnology explores the complex world of brain tumors and the ground-breaking role that nanotechnology is playing in both detection and treatment. It offers comprehensive and up-to-date strategies in the treatment of brain tumors, with a special emphasis on the revolutionary impact of nanotechnology. Brain Tumors and Nanotechnology will be a longstanding valuable resource for researchers, medical professionals, and students in the field.

River Publishers
August 2024:252
Hb: 978-8-770-04088-4: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9788770040884**

ChatGPT & Co.

A Workbook for Writing, Research, Creating Images, Programming, and More



Rainer Hattenhauer

Bolstered with many practical examples from the most diverse areas of application, this book presents ChatGPT as part of an ever-growing toolkit, and guides you on which tools to utilize and apply. This is a valuable workbook for those looking to harness and incorporate ChatGPT and generative AI into their work, studies, or general life.

Chapman & Hall
September 2024:336
Pb: 978-1-032-79952-0: **$44.99**
Hb: 978-1-032-82246-4: **$115**
* For **full contents** and more information, visit: **www.routledge.com/9781032799520**

Cloud of Things

Foundations, Applications, and Challenges

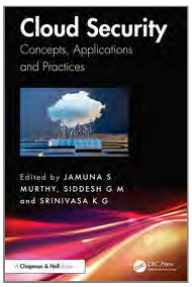
Edited by **Jitendra Kumar** NIT Tiruchirappalli, India**, G. R. Gangadharan** NIT Tiruchirappalli, India**, Ashutosh Kumar Singh** National Institute of Technology, India**, Chung-Nan Lee**

Cloud computing is the on-demand availability of computer system resources, especially data storage and computing power, without direct active management by the user. This book explores algorithms, protocols, and system design principles of key smart technologies including cloud computing and the internet of things. Discusses the system design principles in cloud computing along with artificial intelligence, machine learning, and data analytics applications Presents blockchain-based solutions, cyber-physical system applications, and deep learning approaches to solving practical problems

Chapman & Hall
August 2024:408
Hb: 978-1-032-48441-9: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032484419**

Cloud Security

Concepts, Applications and Practices



Edited by **Jamuna S Murthy , Siddesh G M** M S Ramaiah Institute of Technology, Bangalore**, Srinivasa K G** International institute of Information Technology, Naya Raipur

This book is a comprehensive work that comprises latest development and technologies, challenges, and best practices in the industry. It covers the fundamentals of cloud computing, including deployment models, service models, and the benefits of cloud computing, followed by critical aspects of cloud security, including risk management, threat analysis, data protection, identity and access management, and compliance. The book explores the latest security technologies, such as encryption, multi-factor authentication, and intrusion detection and prevention systems, and their role in securing the cloud environment.

Chapman & Hall
August 2024:304
Hb: 978-1-032-59611-2: **$130**
* For **full contents** and more information, visit: **www.routledge.com/9781032596112**

Coding Android Apps

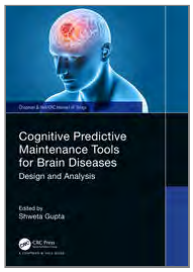
Margaret Polk

As Android apps continue to grow in popularity and an associated job market emerges, the ability to develop software and applications for Android smartphones will only grow more relevant in the foreseeable future. This book is particularly appealing for students of mobile apps development courses offered in computer science and information technology departments, as well as information systems disciplines within business schools, at both the undergraduate and graduate levels.

Chapman & Hall
August 2024:310
Pb: 978-1-032-25888-1: **$69.95**
Hb: 978-1-032-26059-4: **$175**
* For **full contents** and more information, visit: **www.routledge.com/9781032258881**

Cognitive Predictive Maintenance Tools for Brain Diseases

Design and Analysis



Edited by **Shweta Gupta** Woxsen University, India

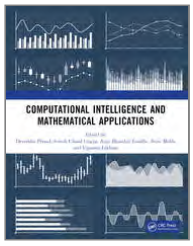
Series: Chapman & Hall/CRC Internet of Things

This book involves the design, analysis, and application of various Cognitive Predictive Maintenance Tests with help of tools like vibration analysis tools, Ultrasonic analysis tools, Infrared analysis tools, Oil analysis tools, Laser-shaft alignment tools, and Motor circuit analysis tools in the prediction of various Cognitive diseases like Epilepsy, Parkinson's Disease, Alzheimer's, depression, etc. which is need of the day since there are no proper medical tests available to predict the diseases in remote areas at an early stage. Various emerging technologies are analyzed for the design of tests.

Chapman & Hall
August 2024:196
Hb: 978-1-032-15682-8: **$180**
eBook: 978-1-003-24534-6
* For **full contents** and more information, visit: **www.routledge.com/9781032156828**

Computational Intelligence and Mathematical Applications

Proceedings of the International Conference on Computational Intelligence and Mathematical Applications



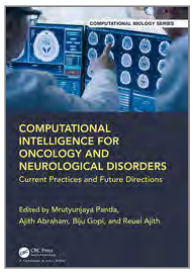
Edited by **Devendra Prasad , Suresh Chand Gupta , Anju Bhandari Gandhi , Stuti Mehla , Upasana Lakhina**

It is with great pleasure to present the proceedings of the International Conference on Computational Intelligence and Mathematical Applications (ICCIMA 2023), held on 21-22 December 2023, at Panipat Institute of Engineering and Technology, Panipat. This conference brought scholars, researchers, professionals, and intellectuals together from diverse fields to exchange ideas, share insights, and foster collaborations in Optimization, Computational Intelligence and Mathematical Applications.

CRC Press
September 2024:334
Pb: 978-1-032-87721-1: **$59.99**
* For **full contents** and more information, visit: **www.routledge.com/9781032877211**

Computational Intelligence for Oncology and Neurological Disorders

Current Practices and Future Directions



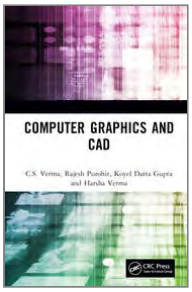
Edited by **Mrutyunjaya Panda** Utkal University, Bhubaneswar**, Ajith Abraham** FLAME University, Lavale, Maharashtra**, Biju Gopi** Medical Trust Hospital, Ernakulam, Kerela**, Reuel Ajith**

Series: Chapman & Hall/CRC Computational Biology Series

The book presents research and review papers in the subject of intelligent systems for computational oncolgy and neurological complications. It gathers high-quality original contributions that contain the latest breakthroughs or applications of practical use and value. It integrates theoretical, applied, computational, experimental, and clinical research, drawing from work in computer science, physics, mathematics, medical science, psychology, cognitive science, cancer, and neurobiology, among other fields. Researchers in neurology or oncology who are interested in computational methods will find it very interesting.

CRC Press
July 2024:292
Hb: 978-1-032-58457-7: **$130**
eBook: 978-1-003-45015-3
* For **full contents** and more information, visit: **www.routledge.com/9781032584577**

Computer Graphics and CAD



C.S. Verma , Rajesh Purohit , Koyel Datta Gupta , Harsha Verma

From the definition and benefits of Computer Graphics to the intricacies of CAD modelling practices, this book discusses the fundamental concepts shaping modern design and visualization. From 3D object representation to surface modelling and solid techniques, subsequent chapters offer a comprehensive exploration of advanced topics essential for geometric modelling. Print edition not for sale in South Asia (India, Sri Lanka, Nepal, Bangladesh, Pakistan or Bhutan)

CRC Press
August 2024:398
Hb: 978-1-032-78987-3: **$200**
eBook: 978-1-003-49012-8
* For **full contents** and more information, visit: **www.routledge.com/9781032789873**

Computer Vision

Challenges, Trends, and Opportunities

Edited by **Md Atiqur Rahman Ahad , Upal Mahbub , Matthew Turk , Richard Hartley**

Series: Chapman & Hall/CRC Computer Vision

This book brings together a range of leading researchers to examine a wide variety of challenges and prospects for computer vision and its applications and covers important topics including as data-driven AI, R&D in industry perspective, biometrics, digital forensics, healthcare, robotics, entertainment and XR, autonomous driving, sports analytics, and neuromorphic computing. Providing a mix of breadth and depth, the book will have an impact across the fields of computer vision, imaging, and AI and will be of great benefit to students, researchers, and industry practitioners.

Chapman & Hall
July 2024:360
Hb: 978-1-032-31705-2: **$150**
* For **full contents** and more information, visit: **www.routledge.com/9781032317052**

Concepts and Design Innovations addressing the Digital Transformation of Data Spaces and Marketplaces

i3-MARKET Book Series - Part I: A Vision to the future of Data-Driven Economy

Edited by **Martín Serrano , Achille Zappa , Waheed Ashraf , Edgar Friess , Iván Martínez , Alessandro Amicone , Pedro Maló , Márcio Mateus , Justina Bieliauskaite , Marina Cugurra**

This book discusses the principles of the modern data economy that lead to make the society more aware about the value of the data that is produced everyday by themselves but also in a collective manner.

River Publishers
August 2024:192
Hb: 978-8-770-04169-0: **$126.5**
* For **full contents** and more information, visit: **www.routledge.com/9788770041690**

Create Stunning Renders Using Corona in 3ds Max

Guiding the Next Generation of 3D Renderers

Margarita Nikita

The book progresses to the creation of materials, their application to the scene, and the utilization of Corona's libraries and presets for efficiency. The potentials of Corona are detailed using a bedroom scene as an example. This practical guide demystifies the complexities of 3D rendering without delving into modeling techniques. With design studios increasingly incorporating 3D renderings into their proposals, this book serves as an invaluable resource for professionals and aspiring renderers alike.

CRC Press
August 2024:220
Pb: 978-1-032-64984-9: **$64.95**
Hb: 978-1-032-64986-3: **$160**
eBook: 978-1-032-64987-0
* For **full contents** and more information, visit: **www.routledge.com/9781032649849**

Data Analytics and Machine Learning for Integrated Corridor Management

Yashawi Karnati , Dhruv Mahajan , Tania Banerjee Prof, Uni of Florida**., Rahul Sengupta , Packard Clay , Ryan Casburn , Nithin Agarwal , Jeremy Dilmore , Anand Rangarajan** Prof, Uni of Florida**, Sanjay Ranka** University of Florida, Gainesville, USA

In an era defined by rapid urbanization and ever-increasing mobility demands, effective transportation management is paramount. This book takes readers on a journey through the intricate web of contemporary transportation systems, offering unparalleled insights into the strategies, technologies, and methodologies shaping the movement of people and goods in urban landscapes. With insights into traffic data visualization and operational performance measures, this book empowers traffic engineers and administrators to design 21st-century signal policies that optimize mobility, enhance safety, and shape the future of urban transportation.

CRC Press
October 2024:240
Hb: 978-1-032-57464-6: **$130**
* For **full contents** and more information, visit: **www.routledge.com/9781032574646**

Data Mining with Python

Theory, Application, and Case Studies

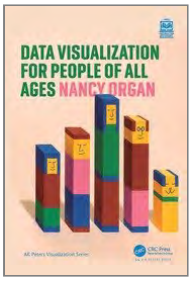
Di Wu

Series: Chapman & Hall/CRC The Python Series

This book focuses on the hands-on approach to learning Data Mining. It showcases how to use Python Packages to fulfill the Data Mining pipeline, which is to collect, integrate, manipulate, clean, process, organize, and analyze data for knowledge. It is designed to give students, data scientists, and business analysts an understanding of Data Mining concepts in an applicable way. Through interactive tutorials that can be run, modified, and used for a more comprehensive learning experience, this book will help its readers to gain practical skills to implement Data Mining techniques in their work.

Chapman & Hall
April 2024:414
Pb: 978-1-032-59890-1: **$59.95**
Hb: 978-1-032-61264-5: **$150**
eBook: 978-1-003-46278-1
* For **full contents** and more information, visit: **www.routledge.com/9781032598901**

Data Visualization for People of All Ages



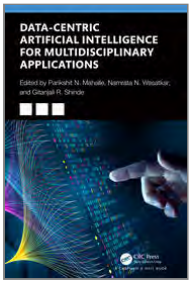
Nancy Organ

Series: AK Peters Visualization Series

The book is a field guide to visual literacy, born from the author's personal experience working with world-class scholars, engineers, and scientists. By walking through the different ways of showing data—including color, angle, position, and length—you'll learn how charts and graphs truly work so that no visualization is ever a mystery or out of reach. It doesn't stop at what fits on a page, either. Written with accessibility in mind, this book invites everyone to the table to share the joy of one of today's most necessary skills. Perfect for home or classroom use, this friendly companion gives people of all ages everything they need to start visualizing with confidence.

A K Peters/CRC Press
April 2024:332
Pb: 978-1-032-30100-6: **$34.95**
Hb: 978-1-032-31360-3: **$99.95**
eBook: 978-1-032-72101-9: **$34.95**
* For **full contents** and more information, visit: **www.routledge.com/9781032301006**

Data-Centric Artificial Intelligence for Multidisciplinary Applications



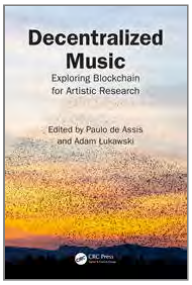
Edited by **Parikshit N Mahalle** VIIT, Pune**, Namrata Nishant Wasatkar** VIIT, Pune**, Gitanjali R. Shinde** Sinhgad Inst. SPPU, Pune, India.

This book explores the need for a data-centric AI approach and its application in the multidisciplinary domain, compared to a model-centric approach. It examines the methodologies for data-centric approaches, the use of data-centric approaches in different domains, the need for edge AI and how it differs from cloud-based AI. It discusses the new category of AI technology, "data-centric AI" (DCAI), which focuses on comprehending, utilising, and reaching conclusions from data. By adding machine learning and big data analytics tools, data-centric AI modifies this by enabling it to learn from data rather than depending on algorithms.

Chapman & Hall
June 2024:308
Hb: 978-1-032-61006-1: **$150**
eBook: 978-1-003-46150-0
* For **full contents** and more information, visit: **www.routledge.com/9781032610061**

Decentralized Music

Exploring Blockchain for Artistic Research



Edited by **Paulo de Assis , Adam Łukawski**

This book offers a thorough examination of the potential of blockchain to transform musical practices. Moving beyond blockchain's financial applications, this book presents various perspectives on how this technology plays an important role in a creative, conceptual and philosophical rethinking of the current modes of artistic creation. Including contributions from leading researchers in music, arts, and technology, the chapters of the book address blockchain's capacity to reconfigure notions of agency, authorship, authenticity, provenance, and ownership in music. Taken together, these chapters challenge conventional centralized mechanisms in music creation and dissemination.

CRC Press
August 2024:210
Pb: 978-1-032-60240-0: **$59.95**
Hb: 978-1-032-60161-8: **$130**
* For **full contents** and more information, visit: **www.routledge.com/9781032602400**

Deep Learning based applications for Multimedia Processing Applications

Volume 1 and 2

Edited by **Uzair Aslam Bhatti , Huang Mengxing , Jingbing Li , Sibghat Ullah Bazai , Muhammad Aamir**

Divided into two volumes, Volume One begins by introducing the fundamental concepts of deep learning, providing readers with a solid foundation to understand its relevance in multimedia processing. Volumes Two delves into advanced topics such as convolutional neural networks, recurrent neural networks, and generative adversarial networks, explaining their unique capabilities in multimedia tasks. Readers will discover how deep learning techniques enable accurate and efficient image recognition, object detection, semantic segmentation, and image synthesis. The book also covers video analysis techniques, including action recognition, video captioning, and video generation.

CRC Press
June 2024:792
Hb: 978-1-032-66585-6: **$210**
* For **full contents** and more information, visit: **www.routledge.com/9781032665856**

Deep Learning in Internet of Things for Next Generation Healthcare

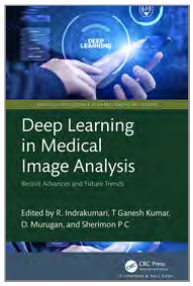
Edited by **Lavanya Sharma** Amity university, Noida, India.**, Pradeep Kumar Garg** IIT Roorkee, India.

This book presents latest developments in deep learning-enabled healthcare tools and technologies and offers practical ideas of using IoT with deep learning (motion-based object data) to deals with human dynamics, and challenges including critical applications domains, technologies, medical imaging, drug discovery, insurance fraud detection and solutions to handle relevant challenges. This book offers real-time healthcare applications, novel solutions, current open challenges, and future of deep learning for next generation healthcare.

Chapman & Hall
June 2024:310
Hb: 978-1-032-58610-6: **$140**
eBook: 978-1-003-45184-6
* For **full contents** and more information, visit: **www.routledge.com/9781032586106**

Deep Learning in Medical Image Analysis

Recent Advances and Future Trends



Edited by **R. Indrakumari** Galgotias University, India**, T. Ganesh Kumar** Galgotias Uni.**, D. Murugan** Manonmaniam Sundaranar University, India**, Sherimon P.C.**

Series: Artificial Intelligence in Smart Healthcare Systems

The proposed book is designed as a reference text and provides a comprehensive overview of conceptual and practical knowledge about deep learning in medical image processing techniques. The post-pandemic situation teaches us the importance of doctors, medical analysis, and diagnosis of diseases in a rapid manner. This book provides a snapshot of the state of current research between deep learning, medical image processing, and healthcare with special emphasis on saving human life. The chapters cover a range of advanced technologies related to patient health monitoring, predicting diseases from genomic data, and detecting artefactual events in vital signs monitoring data.

Chapman & Hall
July 2024:196
Hb: 978-1-032-37992-0: **$120**
eBook: 978-1-003-34317-2
* For **full contents** and more information, visit: **www.routledge.com/9781032379920**

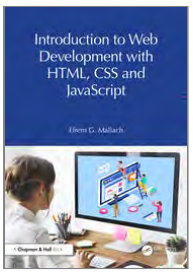
Designing Games Meant for Sharing

Ioana-Iulia Cazacu Lead Game Designer at Mojiworks Limited

This book talks about the importance of social mechanics in games and how these mechanics evolved across time to accommodate new technologies and new social contexts. It looks at the innovation happening in the field of new age social games, discussing in detail what has been learnt from designing for the younger generation, how these findings can inform game design philosophy, and how this can be applied to game development more broadly. This book will appeal to game designers and students of game design looking to learn how to apply learnings from social game design in their own games.

CRC Press
August 2024:210
Pb: 978-1-032-32287-2: **$55.95**
Hb: 978-1-032-32297-1: **$160**
eBook: 978-1-003-31432-5
* For **full contents** and more information, visit: **www.routledge.com/9781032322872**

Developing Web Sites with HTML, CSS and JavaScript



Efrem G. Mallach Rhode Island College, Providence, and Kea Company, New Bedford, Massachusetts, USA

Covering the three underlying technologies of Web pages: HTML, CSS, and JavaScript, this book is a one-stop guide to getting started in web development, be it in a class or as a solo-learner. Starting with no prerequisites beyond minimal exposure to programming, this book guides readers in an accessible fashion through modern page layout methods to building a complete site. Building knowledge from the ground-up, this book appeals to those looking to learn web development from a range of backgrounds, be it academic, professional or personal.

Chapman & Hall
September 2024:500
Pb: 978-1-032-74126-0: **$59.95**
Hb: 978-1-032-74128-4: **$200**
* For **full contents** and more information, visit: **www.routledge.com/9781032741260**

DevOps for Data Science

Alex Gold

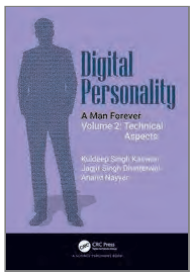
Series: Chapman & Hall/CRC Data Science Series

Data Scientists are experts at analyzing, modelling and visualizing data but, at one point or another, have all encountered difficulties in collaborating with or delivering their work to the people and systems that matter. Born out of the agile software movement, DevOps is a set of practices, principles and tools that help software engineers reliably deploy work to production. This book takes the lessons of DevOps and aplies them to creating and delivering production-grade data science projects in Python and R.

Chapman & Hall
June 2024:274
Hb: 978-1-032-10034-0: **$79.95**
* For **full contents** and more information, visit: **www.routledge.com/9781032100340**

Digital Personality

A Man Forever Volume 2: Technical Aspects



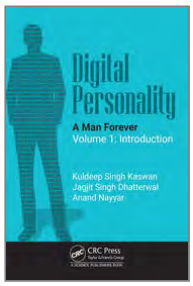
Kuldeep Singh Kaswan Galgotias Univ**, Jagjit Singh Dhatterwal** Koneru Lakshmaiah Education Foundation**, Anand Nayyar** Duy Tan University, Vietnam

Digital Personality has attracted the interest of academics from a wide range of disciplines, including psychology, human-computer interaction, and character modeling. This book provides an overview of the character dimensions and how technology is aiding this area of study. It offers a fresh portrayal of character from several angles. It also discusses the applications of this new field of study.

CRC Press
August 2024:440
Hb: 978-1-032-68403-1: **$190**
* For **full contents** and more information, visit: **www.routledge.com/9781032684031**

Digital Personality: A Man Forever

Volume 1: Introduction



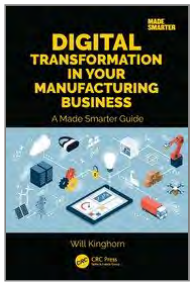
Kuldeep Singh Kaswan Galgotias Univ**, Jagjit Singh Dhatterwal** Koneru Lakshmaiah Education Foundation**, Anand Nayyar** Duy Tan University, Vietnam

The main goal of this book is to enable a seamless and natural human–computer interaction. This will provide better personalized experience. Further, it will influence the performance of the user, wherein they will have the support of the machines to achieve tasks in the most efficient way. This book is the first of a kind in introducing Digital Personality. It provides an overview of the character dimensions and how state-of-the-art technologies would accommodate such a research field.

CRC Press
June 2024:368
Hb: 978-1-032-62835-6: **$170**
eBook: 978-1-032-62843-1
* For **full contents** and more information, visit: **www.routledge.com/9781032628356**

Digital Transformation in Your Manufacturing Business

A Made Smarter Guide



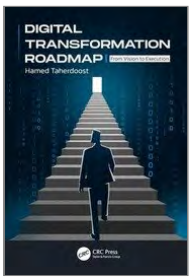
Will Kinghorn

This book will give you a straightforward guide to manufacturing technologies, examples of how they're used, as well as the tools and techniques you'll need to get started. Each technology is covered on a single page meaning you can understand it quickly and decide if it's worth you investigating it for your business. In addition to the book, the online resources will provide you with templates and examples to help you get started quickly, and at every stage there are suggestions for the key terms you need to find more information appropriate to your industry. Get started with making informed decisions, embracing technologies, and transforming your business

CRC Press
June 2024:184
Pb: 978-1-032-62624-6: **$54.95**
Hb: 978-1-032-64220-8: **$220**
eBook: 978-1-032-64221-5
* For **full contents** and more information, visit: **www.routledge.com/9781032626246**

Digital Transformation Roadmap

From Vision to Execution



Hamed Taherdoost University Canada West, Canada

This book offers a comprehensive exploration of the Fourth Industrial Revolution by presenting a roadmap for leveraging technology to revolutionize businesses, strategy, and innovation. Embark on a journey that unveils the dynamic interplay between technology and business. Discover the evolution of tech lifecycles, the significance of digital transformation, and the key domains of change reshaping industries. Whether you're a business leader, strategist, or tech enthusiast, this book equips you with actionable insights, practical strategies, and a forward-thinking mindset to drive change and thrive in the digital landscape.

CRC Press
June 2024:344
Pb: 978-1-032-74053-9: **$140**
Hb: 978-1-032-74848-1: **$220**
eBook: 978-1-003-47122-6
* For **full contents** and more information, visit: **www.routledge.com/9781032740539**

Disruptive Technologies for Sustainable Development

Edited by **G. Nagappan , V Uma Rani**

We feel greatly honoured to have been assigned the job of organizing the AICTE Sponsored International Conference on Application of AI, ML, DL, Big Data on Recent Societal Issues (ICARSI'2023) on April 21 & April 22,2023 at Saveetha Engineering College. The international conference is a platform that brings together the brightest minds from across the globe to share their ideas and insights on the recent societal issues with Artificial intelligence, Machine Learning, Deep Learning, Big data and emerging technologies.

CRC Press
June 2024:298
Hb: 978-1-032-55000-8: **$200**
eBook: 978-1-003-42847-3
* For **full contents** and more information, visit: **www.routledge.com/9781032550008**

Disruptive technologies in Computing and Communication Systems

Proceedings of the 1st International Conference on Disruptive technologies in Computing and Communication Systems

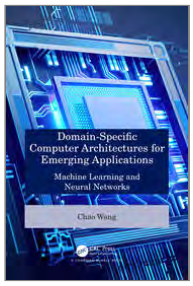
Edited by **K. Venkata Murali Mohan , M. Suresh Babu**

The 1st International Conference on Disruptive Technologies in Computing and Communication Systems (ICDTCCS - 2023) has received overwhelming response on call for papers and over 119 papers from all over globe were received. We must appreciate the untiring contribution of the members of the organizing committee and Reviewers Board who worked hard to review the papers and finally a set of 69 technical papers were recommended for publication in the conference proceedings.

CRC Press
April 2024:458
Pb: 978-1-032-66547-4: **$200**
eBook: 978-1-032-66553-5
* For **full contents** and more information, visit: **www.routledge.com/9781032665474**

Domain-Specific Computer Architectures for Emerging Applications

Machine Learning and Neural Networks



Chao Wang University of Science and Technology of China, Jiangsu, China

With the end of Moore's Law, Domain-Specific Architectures (DSA) have become a crucial mode of implementing future computing architectures. This book discusses the system-level design methodology of DSAs and their applications, providing a unified design process that guarantees functionality, performance, energy efficiency and real-time responsiveness for the target application. Providing cutting-edge discussion of big data and artificial intelligence scenarios in contemporary industry and typical DSA applications, this book appeals to industry professionals as well as academicians researching the future of computing in these areas.

Chapman & Hall
June 2024:416
Hb: 978-0-367-37453-2: **$130**
eBook: 978-0-429-35508-0
* For **full contents** and more information, visit: **www.routledge.com/9780367374532**

Empowering Digital Education with ChatGPT

From Theoretical to Practical Applications

Edited by **Mohamed Lahby**

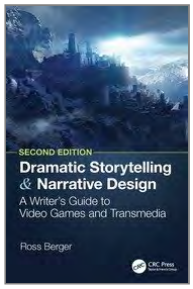
This book explores the transformative potential of the ChatGPT tool within education, shedding light on the opportunities that arise through the integration of the ChatGPT tool into various aspects of the learning process. It serves as a platform for the community to share cutting-edge research ideas concerning the use of the ChatGPT tool in digital education. Readers will discover how the ChatGPT tool can enhance student engagement, foster personalized learning experiences, facilitate intelligent tutoring systems, support virtual classroom interactions, and revolutionize assessment and feedback mechanisms.

Chapman & Hall
November 2024:300
Hb: 978-1-032-71608-4: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032716084**

2ND EDITION

Dramatic Storytelling and Narrative Design

A Writer's Guide to Video Games and Transmedia



Ross Berger

This book provides an industry professional's first-hand perspective on narrative design's practical usage, day-to-day roles and responsibilities, and keys to breaking in and succeeding. The book delves into the foundations of compelling storytelling through structural analysis and character archetype breakdowns. This book will be of great interest to all those interested in the craft of storytelling, narrative design, and game writing.

CRC Press
October 2024:272
Pb: 978-1-032-57161-4: **$64.95**
Hb: 978-1-032-57162-1: **$160**
* For **full contents** and more information, visit: **www.routledge.com/9781032571614**

Energy Efficiency and Robustness of Advanced Machine Learning Architectures

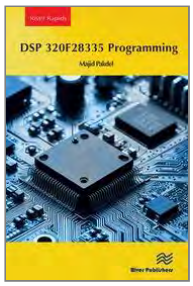
A Cross-Layer Approach

Alberto Marchisio , Muhammad Shafique

This book tackles these challenges by exploiting the unique features of advanced ML models and investigates cross-layer concepts and techniques to engage both hardware and software-level methods to build robust and energy-efficient architectures for these advanced ML networks. More specifically, this book improves the energy efficiency of complex models like CapsNets, through a specialized flow of hardware-level designs and software-level optimizations exploiting the application-driven knowledge of these systems and the error tolerance through approximations and quantization.

Chapman & Hall
November 2024:360
Hb: 978-1-032-85550-9: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032855509**

DSP 320F28335 Programming



Majid Pakdel

This book provides a comprehensive, practical approach to understanding and implementing the programming concepts of the DSP 320F28335 microcontroller. It is an indispensable guide for both seasoned professionals and beginners interested in mastering the complexities of programmable digital signal processors (DSPs).

River Publishers
June 2024:144
Pb: 978-8-770-04197-3: **$75**
* For **full contents** and more information, visit: **www.routledge.com/9788770041973**

Essential Programming for the Technical Artist

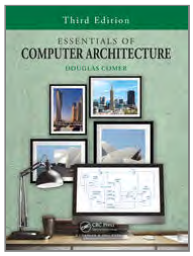
Chris Roda

This book is based on a successful curriculum designed to elevate technical artists, with no programming experience, up to essential programming competency as quickly as possible. Instead of abstract, theoretical problems, the curriculum employs familiar applications encountered in real production environments to demonstrate each lesson. Written with artists in mind, the book introduces novice programmers to the advantageous world of Python programming with relevant and familiar examples. Any digital artists, (not just technical artists), will find this book helpful in assisting with day-to-day production activities.

CRC Press
May 2024:520
Pb: 978-0-367-82040-4: **$79.95**
Hb: 978-0-367-86009-7: **$190**
eBook: 978-1-003-01642-7
* For **full contents** and more information, visit: **www.routledge.com/9780367820404**

3RD EDITION

Essentials of Computer Architecture



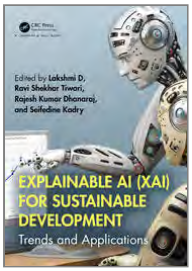
Douglas Comer

This easy-to-read textbook provides an introduction to computer architecture, focusing on the essential aspects of hardware that programmers need to know. Written from a programmer's point of view, this book covers the three key aspects of architecture: processors, physical and virtual memories, and input-output (I/O) systems. Suitable for a one-semester undergraduate course, this clear, concise, and easy-to-read textbook offers an ideal introduction to computer architecture for students studying computer programming.

Chapman & Hall
May 2024:541
Hb: 978-1-032-72719-6: **$99.95**
* For **full contents** and more information, visit: **www.routledge.com/9781032727196**

Explainable AI (XAI) for Sustainable Development

Trends and Applications

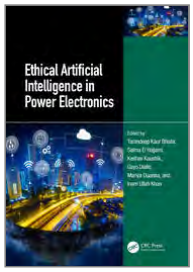


Edited by **Lakshmi D** VIT Bhopal University**, Ravi Shekhar Tiwari** IIT-Patna**, Rajesh Kumar Dhanaraj** Symbiosis International (Deemed University)**, Seifedine Kadry**

This book presents innovative research works to automate, innovate, design, and deploy AI for Real-World Applications. It discussed AI applications in major cutting-edge technologies and details about deployment solutions for different applications for sustainable development. The application of Blockchain techniques illustrates the ways of optimisation algorithms in this book. The challenges associated with AI deployment are also discussed in detail, and edge computing with machine learning solutions is explained.

Chapman & Hall
June 2024:334
Hb: 978-1-032-59886-4: **$170**
eBook: 978-1-003-45717-6
* For **full contents** and more information, visit: **www.routledge.com/9781032598864**

Ethical Artificial Intelligence in Power Electronics



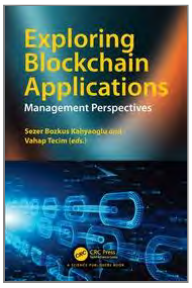
Edited by **Tarandeep Kaur Bhatia** University of Petroleum and Energy Studies, India**, Salma El Hajjami** Computer science department, Faculty of science, Ibn Zohr University**, Keshav Kaushik** UPES, Dehradun, India**, Gayo Diallo** Bordeaux Population Health Research Center, University of Bordeaux, France**, Mariya Ouaissa , Inam Ullah Khan** Department of Electronic Engineering, SEAS, Isra University, Islamabad Campus

The main essential points of this book will cover all the most advanced developments and future prospects viewpoints for the powerful energy achievable in the vehicles. The data, insights, facts, and information presented will assist as well as support the scholars, researchers, authors, students to learn the basic technical specifications of power energy used in the vehicles. Also, this knowledge will make the authors learn and examine the optimization of vehicular power when the vehicles are stabbed in an extremely congested VANETs environment.This book contributes a unique strategy for the optimization of vehicular power using Ethical-AI methods.

CRC Press
August 2024:182
Hb: 978-1-032-63115-8: **$170**
* For **full contents** and more information, visit: **www.routledge.com/9781032631158**

Exploring Blockchain Applications

Management Perspectives



Edited by **Sezer Bozkus Kahyaoglu** Uni of South Africa Financial Gov Dep, South Africa**, Vahap Tecim**

The book reviews the development process of blockchain algorithms and examples of their applications in different sectors. The opportunities and challenges of blockchain implementations that arise in making technological innovations usable in corporate structures are discussed. In this respect, it aims to deal with both the conceptual framework and the real challenges and opportunities encountered in practice in blockchain applications. As such, it presents suggestions on practical blockchain applications to the readers on a scientific basis.

CRC Press
May 2024:304
Hb: 978-1-032-48539-3: **$160**
eBook: 978-1-003-38955-2
* For **full contents** and more information, visit: **www.routledge.com/9781032485393**

Evolution and Advances in Computing Technologies for Industry 6.0

Technology, Practices, and Challenges

Edited by **C. Kishor Kumar Reddy** Stanley Col of Engg and Tech for Women, India**, Srinath Doss** Botho University, Botswana**, Surbhi Bhatia** College of Computer Sciences and Information Technology, King Faisal University, Saudi Arabia.**, Abdulmajeed Alqhatani**

This comprehensive review explores the evolution from Industry 4.0 to the cutting-edge Industry 6.0, offering insights into the integration of next-generation computing, including IoT, AI, machine learning, deep learning, edge computing and quantum computing.

CRC Press
November 2024:392
Hb: 978-1-032-82304-1: **$200**
* For **full contents** and more information, visit: **www.routledge.com/9781032823041**

Farming Simulator Modding with Blender

A Step-by-step Guide to Creating, Optimizing and Publishing Mods

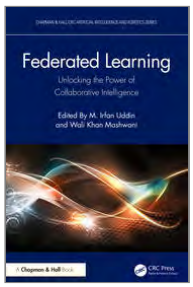
Jason van Gumster , Stefan Maurus

This is a comprehensive guide to creating and customizing mods for the popular video game Farming Simulator within Blender. This book covers all aspects needed to create your own vehicle mods from start to finish. This book will appeal to all Farming Simulator modders, as well as those looking to learn game development concepts within Blender.

CRC Press
October 2024:272
Pb: 978-1-032-63969-7: **$49.99**
Hb: 978-1-032-65948-0: **$160**
* For **full contents** and more information, visit: **www.routledge.com/9781032639697**

Federated Learning

Unlocking the Power of Collaborative Intelligence



Edited by **M. Irfan Uddin , Wali Khan Mashwani**

Series: Chapman & Hall/CRC Artificial Intelligence and Robotics Series

With detailed case studies and step-by-step implementation guides, this book shows how to build and deploy federated learning systems in real-world scenarios – such as in healthcare, finance, IoT, and edge computing. Whether you are a researcher, a data scientist, or a professional exploring the potential of federated learning, the book will empower you with the knowledge and practical tools needed to unlock the power of federated learning and harness the collaborative intelligence of distributed systems.

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Federated Learning for Smart Communication using IoT Application

Edited by **Kaushal Kishor** Abes Inst. of Tech.**, Parma Nand** Sharda University, India**, Vishal Jain** Sharda University, Greater Noida, India**, Neetesh Saxena** Cardiff University, UK**, Gaurav Agarwal** Galgotias University, India**, Rani Astya**

Series: Chapman & Hall/CRC Cyber-Physical Systems

The book aims to demonstrate the effectiveness of federated learning in high-performance information systems and informatics-based solutions for addressing current information support requirements. To address heterogeneity challenges in IoT contexts, it analyses the development of personalized federated learning algorithms capable of mitigating the detrimental consequences of heterogeneity in several dimensions. It includes case studies of IoT-based human activity recognition to demonstrate the efficacy of personalized federated learning for intelligent IoT applications.

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Formal Methods for Managing and Processing Ontology Alignments

Marcin Pietranik Wroclaw University of Science and Technology Wybreze St Wyspinaskiego 27 Wroclaw Poland 50-370

Ontologies are formal knowledge representation methods that can provide means for a shared understanding of a given domain. This book provides complete ontology alignment lifecycle, including modelling, methods, and maintenance processes. Summarizing the author's research from the past ten years, this book consolidates findings previously published in prestigious international journals and presented at leading conferences. The book introduces basic mathematical concepts, and later chapters build upon these foundations, but each focusses on specific aspects of ontology alignment, making the content accessible and easy to follow.

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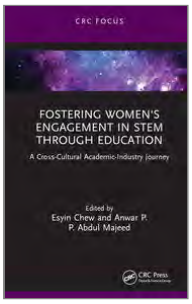
Fostering Women's Engagement in STEM Through Education

A Cross-Cultural Academic-Industry Journey



Edited by **Anwar P.P. Abdul Majeed , Esyin Chew**

Fostering Women's Engagement with STEM Through Education: A Cross-Cultural Academic-Industry Journey uniquely intertwines academic rigor with real-world impact, offering a comprehensive exploration of STEM experiences forged through the Partnership in Innovation for Employability (PIE) programme. The PIE programme, funded by the British Council, is aimed at nurturing innovation and facilitating interaction to enhance employability within educational robotics.

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Foundations of AI and Robotics

Two Volume Set

Wendell Chun

Artificial Intelligence (AI) is a complicated science that combines philosophy, cognitive psychology, neuroscience, mathematics and logic (logicism), economics, computer science, computability, and software. Meanwhile, robotics is an engineering field that compliments AI. There can be situations where AI can function without a robot (e.g. Turing Test) and robotics without AI (e.g. teleoperation), but in many cases, each technology requires each other to exhibit a complete system: having "smart" robots and AI being able to control its interactions (i.e., effectors) with its environment.

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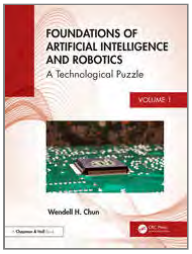
Foundations of Artificial Intelligence and Robotics

Volume 1 A Technological Puzzle



Wendell Chun Oakland University, USA

Artificial Intelligence (AI) is a complicated science that combines philosophy, cognitive psychology, neuroscience, mathematics and logic (logicism), economics, computer science, computability, and software. Meanwhile, robotics is an engineering field that compliments AI. There can be situations where AI can function without a robot (e.g. Turing Test) and robotics without AI (e.g. teleoperation), but in many cases, each technology requires each other to exhibit a complete system: having "smart" robots and AI being able to control its interactions (i.e., effectors) with its environment.

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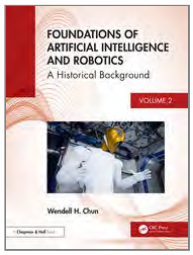
Foundations of Artificial Intelligence and Robotics

Volume 2 A Historical Background



Wendell Chun

Artificial Intelligence (AI) is a complicated science that combines philosophy, cognitive psychology, neuroscience, mathematics and logic (logicism), economics, computer science, computability, and software. Meanwhile, robotics is an engineering field that compliments AI. There can be situations where AI can function without a robot (e.g. Turing Test) and robotics without AI (e.g. teleoperation), but in many cases, each technology requires each other to exhibit a complete system: having "smart" robots and AI being able to control its interactions (i.e., effectors) with its environment.

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Future Communication Systems Using Artificial Intelligence, Internet of Things and Data Science

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Edited by **Inam Ullah** Department of Computer Engineering, Gachon University, Seongnam, Sujeong-gu 13120, Republic of Kore**, Inam Ullah Khan** Department of Electronic Engineering, SEAS, Isra University, Islamabad Campus**, Mariya Ouaissa , Mariyam Ouaissa , Salma El Hajjami** Computer science department, Faculty of science, Ibn Zohr University

This book provides valuable resources for understanding latest advancements in Artificial intelligence, Internet of Things, and Data Science applying for Future Communications Systems. The book aims to broaden the scope of the study to include data science and intelligent IoT and presents a comprehensive overview of the notion of data science modeling, from business problems to data products and automation, in order to comprehend its importance and deliver intelligent services in real-world settings. Each and every chapter presents technological advancements, solutions, ethical considerations and opportunities.

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Future Tech Startups and Innovation in the Age of AI

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Edited by **Inam Ullah Khan** Department of Electronic Engineering, SEAS, Isra University, Islamabad Campus**, Hamed Taherdoost** University Canada West, Canada**, Mitra Madanchian** University Canada West**, Mariya Ouaissa , Salma El Hajjami** Computer science department, Faculty of science, Ibn Zohr University**, Hameedur Rahman**

Entrepreneurs, engineers, practitioners have already moved towards AI based solutions to reshape businesses. AI/ML will create possibilities, opportunities for improving human life style. AI enabled startups will work on cost effective solutions to solve difficult problems. Recently, many research companies are interested in providing solutions and investing a lot in AI based startups. AI computing tech companies will help to model human speech recognition systems. Also, AI based startups will focus on perception and reasoning of autonomous robotic systems. AI/ML based tech startups will introduce smart online education system for future pandemics.

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Game AI Uncovered

Volume Two

Edited by **Paul Roberts**

Game AI Uncovered: Volume Two continues the series with the collected wisdom, ideas, tricks and cutting-edge techniques from 22 of the top game AI professionals and researchers, from around the world. Beginners to the area of game AI, along with professional developers, will find a wealth of knowledge that will not only help in the development in your own games but will spark ideas for new approaches.

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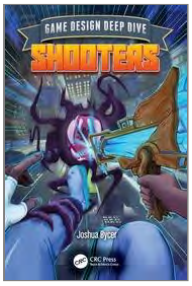
Game Design Deep Dive

Shooters



Joshua Bycer

This entry in the Game Design Deep Dive series takes a look at the shooter genre. One that has grown with the times and whose influence can be felt from indie teams to major studios. Josh Bycer discusses 30 plus year history of one of games industry's most popular genres to talk about how to design one your own. This book is perfect for students and designers to learn about one of the most popular genres on the market.

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Game Design Deep Dive

Soulslike

Joshua Bycer

For this entry in the Game Design Deep Dive series, it'sJoshua Bycer takes a look at how the "soulslike" genre with its unique design, became popular over the 2010's and culminating with one of the bestselling games of 2022 with Elden Ring.

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Game Economy Design

Metagame, Monetization and Live Operations

Charlie Czerkawski

This book provides a comprehensive overview of game economy design. It begins with a high-level overview, then utilises subsequent chapters to break this down into finer details, showing methods to approach the various problems and challenges involved in creating an intricate game economy and meta game experience. The content of the book extends to associated and related fields such as monetisation and live operations. The book will appeal to all game design professionals and students of game design that wish to gain a deeper understanding of how to develop game economies.

CRC Press
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Great Games Need Great Leaders

Multiclassing to Lead Game Development Teams

Matthew John Dyet

This book brings together the knowledge and perspectives of numerous past and present games industry leaders and practitioners to form a clear picture of how leadership operates in a game development studio. It identifies the ways in which things are changing or can change for the better in the games industry and provides a set of tools for the reader to use in their own professional practice. This book will be of great interest to anybody interested or currently working in games development, particularly those who are producers, project managers, product owners, scrum masters, leads and associate leads.

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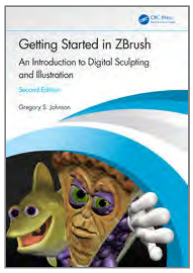
2ND EDITION

Getting Started in ZBrush

An Introduction to Digital Sculpting and Illustration



Gregory S. Johnson Savannah College of Art and Design, Georgia, USA

Beginning with the fundamentals of digital sculpting as well as a thorough introduction to the user interface, Getting Started in ZBrush will have you creating a variety of professional-level 3D models in no-time. More than just another button-pushing manual, this comprehensive guide is packed with start-to-finish projects that ease you into the workflow of the program, while at the same time providing tips and tricks that will allow you to achieve certain tasks much more quickly. After progressing through the tutorials, you will be shown how to customize brushes, materials, scripts, and the interface so that you can utilize these tools to their full advantage.

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Green Automation

Increasing Sustainability, From Industry to Our Home

Francisco José Gomes da Silva ISEP - School of Engineering, Polytechnic of Porto

Environmental issues are a growing concern for our society, and should deserve increased attention, given the extremely negative climate changes which have been taking place. Emissions of greenhouse gases, excessive dependence on fossil fuels, growing consumption of power energy, and exacerbated consumption of materials are some of the problems that need to be addressed urgently. Some of these problems can be overcome through ingenious solutions based on automation.

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Graphic Design for Board Games

Daniel Solis

Series: CRC Press Guides to Tabletop Game Design

Board games are increasingly recognized as an artform of their own, but their design and aesthetics are just as important as their gameplay mechanics. In this handbook, art director and graphic designer Daniel Solis offers his 20+ years of expertise in graphic design in tabletop gaming. With a sense of humor, plenty of examples, and simple tips, Graphic Design for Board Games covers everything from typography to retail presence. Learn how to effectively use graphic design elements to enhance player experience. Create stunning game components, clear rulebooks, and effective game boards that will keep players engaged.

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Guide to SRv6 Network Deployment

Edited by **Minwei Jin , Zhenbin Li , Lanjun Luo , Weidong Li**

Series: Data Communication Series

This book shows how SRv6 can be used in real-world network deployments, providing real-world project cases from multiple carriers and enterprises. This book is a valuable reference for academics and students majoring in data communications, as well as data communications professionals and managers responsible for network planning and design, and network operation and maintenance management.

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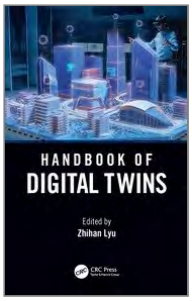
Handbook of Digital Twins



Edited by **Zhihan Lyu**

Over the last two decades, Digital Twins have become the intelligent representation of future development in industrial production and daily life. Consisting of over 50 chapters by more than 100 contributors, this comprehensive handbook explains the concept, architecture, design specification and application scenarios of Digital Twins. This book aims to provide an in-depth understanding and reference of Digital Twins to technical personnel in the field, students and scholars of related majors, and general readers interested in intelligent industrial manufacturing.

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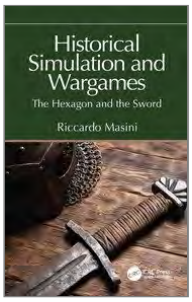
Historical Simulation and Wargames

The Hexagon and the Sword



Riccardo Masini

This book is a comprehensive study on analog historical simulation games, exploring both their theoretical concepts and practical solutions. It considers the various ways used by simulation games to depict the different dynamics of historical events and analyzes how commercial analog miniature and wargames can become valuable tools for historical research. The book will be of great interest to those curious about the potential applications of such a powerful research and experimental tool for historical, sociologic, and anthropologic research, as well as wargaming and board gaming enthusiasts looking to gain a deeper understanding of the inner workings of historical simulations.

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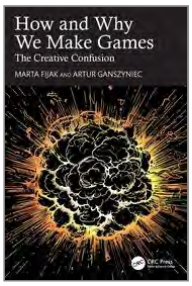
How and Why We Make Games

The Creative Confusion



Marta Fijak , Artur Ganszyniec

This book delves into the intricate realms of games and their creation, examining them through cultural, systemic, and, most notably, human lenses. It explores diverse themes like authorship, creative responsibility, the tension between games as a product and games as a form of cultural expression, and the myth of a universal audience. This book is written for readers passionate about the craft of making games, including journalists and industry professionals. It offers a more humanistic perspective on games, presented by experienced writers who know the intricacies of game development.

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Human Machine Interaction in the Digital Era

Towards Conversational Artificial Intelligence

Edited by **J Dhilipan , V Saravanan , R Agusthiyar**

The Human Machine Interaction in the Digital Era (ICHMIDE) 2023 conference aims to address the main issues of concern in the design issues with a particular emphasis on the design and development of interfaces for autonomous robots. Its main objective is to provide an international forum for the dissemination and exchange of up-to-date scientific information on research related to integrated human/machine systems at multiple scales, and includes areas such as human/machine interaction, engineering mathematical models, assistive technologies, system modelling, design, testing and validation

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Image Processing and Machine Learning

Erik Cuevas , Alma Nayeli Rodríguez

Series: (ISC)2 Press

Image processing and machine learning are used in conjunction to analyze and understand images. Where image processing is used to pre-process images using techniques such as filtering, segmentation and feature extraction, machine learning learning algorithms are used to interpret the processed data through classification, clustering and object detection. This book serves as a textbook for students and instructors of image processing, covering the theoretical foundations and practical applications of some of the most prevalent image processing methods and approaches.

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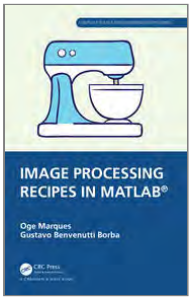
Image Processing Recipes in MATLAB®



Oge Marques NVIDIA and Florida Atlantic University, Boca Raton, USA**, Gustavo Benvenutti Borba** Federal University of Technology-Paraná, Curitiba, Brazil

Series: Chapman & Hall/CRC Computer Science and Engineering Recipes Series

Leveraging the latest developments in MATLAB and its image processing toolbox, this 'cookbook' is a collection of 30 practical recipes for image processing, ranging from foundational techniques to recently published algorithms. Presented in a clear and meaningful sequence, these recipes are prepared with the reader in mind, allowing one to focus in on particular topics or read as a whole from cover to cover. The book serves as a concise and readable practical reference to deploy image processing pipelines in MATLAB quickly and efficiently.

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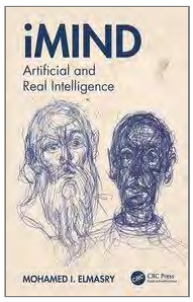
iMind

Artificial and Real Intelligence



Mohamed I. Elmasry

Why has so much of our recent attention been focused on AI while RI is all but forgotten? And why are we spending so much energy debating the future of AI rather than that of its human original? This book is the first comprehensive popular science account of AI and RI. Unique in scope, it discusses the interdisciplinary science of AI, RI, smartphones, smart sensors, microchips, and the brain-mind connection. It explores what is beyond the physical, including mindfulness and spiritually, how they can impact our well-being in the here and now, and how they could help us all to achieve a healthy and fulfilling old age.

CRC Press
August 2024:190
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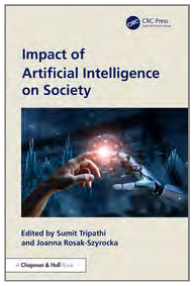
Impact of Artificial Intelligence on Society



Edited by **Sumit Tripathi** ATLAS SkillTech University, India**, Joanna Rosak-Szyrocka** Czestochowa University of Technology, Poland

The book presents a comprehensive and interdisciplinary exploration of the impact of AI on various sectors of society to foster a greater understanding of the opportunities and challenges presented by this transformative technology. It explores the impact AI has had on varied sectors of society, including healthcare, education, the workplace, and the economy. It provides a holistic view of this fast-growing technology by critical study of the possible benefits and drawbacks linked with the application of AI in many industries. The book also examines the ethical, social, and economic implications of AI and the potential risks and challenges associated with its use.

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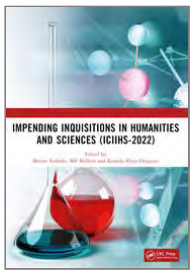
Impending Inquisitions in Humanities and Sciences



Edited by **Mohan Varkolu , MP Mallesh , Kranthi Priya Oruganti**

The landscape of the humanities and sciences is shifting beneath our feet. Old certainties are fading, new challenges are emerging, and the very foundations of our disciplines are being questioned.

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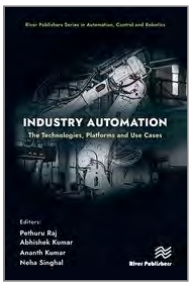
Industry Automation: The Technologies, Platforms and Use Cases



Edited by **Pethuru Raj , Abhishek Kumar , Ananth Kumar , Neha Singhal**

Series: River Publishers Series in Automation, Control and Robotics

This book details cutting-edge technologies, versatile tools, adaptive processes, integrated platforms, and best practices of digitized systems. With the faster maturity and stability of digitization and digitalization technologies, all kinds of physical, mechanical, and electrical systems in our everyday environments (homes, hotels, hospitals, manufacturing floors, etc.) have become digitized systems.

River Publishers
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Innovation in the University 4.0 System based on Smart Technologies

Edited by **Shashi Kant Gupta , Joanna Rosak-Szyrocka** Czestochowa University of Technology, Poland

This text presents a comprehensive analysis of mathematical formulations for proving the effectiveness of artificial intelligence in education and investigates the possibilities for integrating advanced artificial intelligence algorithms. It presents an empirical analysis of the impact of information technology in the education system.

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Integration of Cloud Computing and IoT

Trends, Case Studies and Applications

Edited by **Prabhdeep Singh , Mohit Angurala**

Series: Emerging Technologies

This book presents cutting-edge research, advanced techniques, and practical applications of the integration of Cloud Computing and IoT. It explores the practical challenges associated with the development and deployment of Cloud Computing and IoT-based solutions, including security, privacy, and interoperability issues. It includes various case studies, including Smart Cities, Network Security, Healthcare, Smart Urban Sensing, Agriculture, Mining, Railways, and Crime Investigations. It offers in-depth insights, developments, and practical applications, showcasing helpful tools and techniques in IoT and Cloud Computing.

Chapman & Hall
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Hb: 978-1-032-64741-8: **$190**
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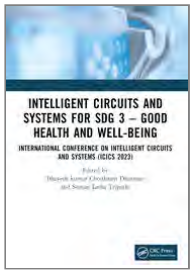
Intelligent Circuits and Systems for SDG 3 – Good Health and well-being

International Conference on Intelligent Circuits and Systems (ICICS 2023)



Edited by **Bhavesh kumar Choithram Dharman , Suman Latha Tripathi**

ICICS is a series of conferences initiated by School of Electronics and Electrical Engineering at Lovely Professional University. Looking at the response to the conference, the bi-annual conference now onwards will be annual.

CRC Press
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Intelligent Computing and Optimization for Sustainable Development

Edited by **Veena Grover** Noida Institute of Engineering & Technology, India**, Rajesh Kumar Dhanaraj** Galgotias Uni.**, Balamurugan Balusamy** Shiv Nadar Uni.**, Gopal Rathinam** University of Buraimi, Oman

This book presents insights into how Intelligent Computing and Optimization techniques can be used for attaining the goals of Sustainable Development. It provides a comprehensive overview of the latest breakthroughs and recent developments in sustainable, intelligent computing technologies, applications, and optimisation techniques across various industries, including Business Process Management, Manufacturing, Financial Sector, Agriculture, Financial Sector. Supply Chain Management and Healthcare etc. It focuses upon Computational Intelligent Techniques along with Optimization techniques to provide sustainable solutions to many problems.

Chapman & Hall
November 2024:304
Hb: 978-1-032-62456-3: **$180**
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Intelligent Computing on IoT 2.0, Big Data Analytics, and Block Chain Technology

Edited by **Mohammad S. Obaidat , Padmalaya Nayak** Rangaraju Inst. of Eng. & Tech.**, Niranjan K. Ray** Kalinga Inst. of Ind. Tech.

The book is designed as a reference text and explores the concepts and techniques of IoT, AI, and blockchain. It also discusses the possibility of applying blockchain for providing security in various domains. The specific highlight of this book is focused on the application of integrated technologies in enhancing data models, better insights and discovery, intelligent predictions, smarter finance, smart retail, global verification, transparent governance, and innovative audit systems.

Chapman & Hall
May 2024:418
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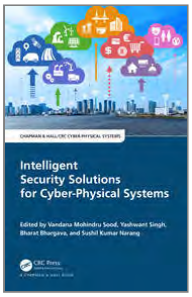
Intelligent Security Solutions for Cyber-Physical Systems



Edited by **Vandana Mohindru Sood , Yashwant Singh , Bharat Bhargava , Sushil Kumar Narang**

Series: Chapman & Hall/CRC Cyber-Physical Systems

This text addresses the security aspects of intelligent cyber-physical systems in a comprehensive manner. It discusses various attack detection methods, intelligent solutions for securing cyber-physical systems, lightweight cryptographic solutions, and classification of network abnormalities. The book also elaborates on the explainable unsupervised machine learning, intelligent data management framework, and machine learning approaches for continuous detection of concept drift. It is primarily aimed at graduate students, and academic researchers in the fields of computer science and engineering, information technology, and electronics and communication engineering.

Chapman & Hall
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Intelligent Systems and Industrial Internet of Things for Sustainable Development

Edited by **C. Kishor Kumar Reddy** Stanley Col of Engg and Tech for Women, India**, P. R Anisha** Stanley Col of Engg and Tech for Women, India**, Marlia Mohd Hanafiah** UKM, Malaysia**, Srinath Doss** Botho University, Botswana**, Kari Lippert**

Series: Digital Technologies and Innovative Solutions for Sustainable Development

The book studies emerging and sustaining technologies for applications of Industry 5.0 to develop technological solutions to address numerous real-life challenges to solve sustainable development-related issues. It identifies limitations, pitfalls, and open research questions in industry 5.0, discusses real-time problems, and challenges with equivalent solutions with a focus on sustainable growth to develop, humanization and environmentally friendly intelligent system applications. It analyses applications enabled by Industry 5.0 such as healthcare, supply chain, smart framing, remote sensing, production in manufacturing, and cloud manufacturing.

Chapman & Hall
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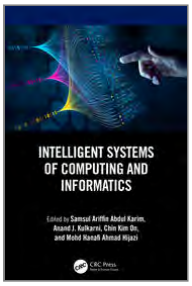
Intelligent Systems of Computing and Informatics



Edited by **Samsul Ariffin Abdul Karim** FASD, Universiti Teknologi Petronas, Malaysia**, Anand J. Kulkarni** MIT World Peace University, Pune, India**, Chin Kim On , Mohd Hanafi Ahmad Hijazi**

This book aims to develop a new Intelligent Systems of Computing and Informatics (ISCI) to cater to the needs of industries in line with the United Nation Sustainable Development Goals (SDGs) of affordable and clean energy and sustainable cities and communities. Comprised of 20 chapters by experts from all over the world, the book covers such topics as data technologies, machine learning, signal and image processing, software systems efficiency, computer Networking, IoT, and computational intelligence for real-life problems.

CRC Press
June 2024:354
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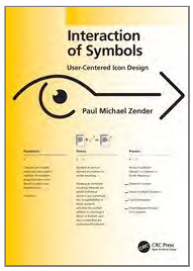
Interaction of Symbols

User-Centered Icon Design



Paul Michael Zender

In Joyful Infographics, one of the leading graphic designers of recent times shows how a judicious use of humor can make infographics more understandable. Written in non-academic, easy to understand language, and with historical and contemporary visual examples presented throughout, this small book provides a short history of light-hearted graphics; it outlines eight clear ways to make graphics more understandable; it explores the importance of the audience; it shows you how to make information come alive during presentations through live-action 'performance' graphics; it discusses why joy and smiling are good for you; and it shows you how not to overdo it.

CRC Press
September 2024:350
Pb: 978-1-032-59125-4: **$69.95**
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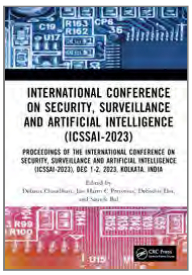
International Conference on Security, Surveillance and Artificial Intelligence (ICSSAI-2023)

Proceedings of the International Conference on Security, Surveillance and Artificial Intelligence (ICSSAI-2023), Dec 1–2, 2023, Kolkata, India



Edited by **Debasis Chaudhuri , Jan Harm Pretorius , Debashis Das , Sauvik Bal**

The International Conference on Security, Surveillance & Artificial Intelligence (ICSSAI2023) was held in West Bengal, India during December 1–2, 2023. The conference was organized by the Techno India University, one of the renowned universities in the state of West Bengal which is committed for generating, disseminating and preservingknowledge.

CRC Press
May 2024:468
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eBook: 978-1-003-42845-9
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Interactive Media with Next-Gen Technologies and Their Usability Evaluation

Edited by **Chhaya Santosh Gosavi** MKSSS's Cummins College of Engineering for Women, Pune**, Ganesh Bhutkar** Vishwakarma Institute of Technology, Maharashtra**, Abhijit Banubakode** MET INSTITUTE OF COMPUTER SCIENCE, Mumbai, India**, Emmanuel Eilu** Uganda Christian University

Interactive media are a human-machine interface that allows people to connect with each other by making them active participants in the media they consume through text, graphics, audio and video. This book presents the challenges and opportunities presented by emerging media technologies to explore usability evaluation. It covers the current trends in interactive media technologies such as, Social Media, Dark Patterns, Internet of Things (IoT), Android Development, Assistive Technologies and Augmented Reality (AR) / Virtual Reality (VR).

Chapman & Hall
November 2024:352
Hb: 978-1-032-66479-8: **$190**
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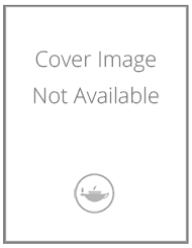
Internet of Things (IoT) and Wastewater Reuse



Ana Cristina Faria Ribeiro , A. K. Haghi

This work aims to present the practical application of an IoT model that can be used as the solution to the problems of water facilities. It presents IoT as one of the efficient tools for the control of a set of water and wastewater networks. Another novelty of this work is to investigate the utilization of remote sensing (RS) facilities equipped with networked sensors, advanced modems, data loggers, and the IoT in a case study. This volume is ideal for water industry personnel, academic staff, and master/research students in environmental engineering science.

River Publishers
July 2024:60
Pb: 978-8-770-04201-7: **$65**
* For **full contents** and more information, visit: **www.routledge.com/9788770042017**

Interdisciplinary Research in Technology and Management

Proceedings of the International Conference on Interdisciplinary Research in Technology and Management (IRTM, 2023), 30th March-1st April 2023, New Delhi, India

Edited by **Satyajit Chakrabarti , Ashiq A. Sakib , Souti Chattopadhyay , Sanghamitra Poddar , Anupam Bhattacharya , Malay Gangopadhyaya**

The pandemic unleashed by Covid 19 in the last two years has shaken the socio-economic foundations of countries and societies to a point where the world cannot be the same as before the pandemic. The third edition of the conference on "Interdisciplinary Research in Technology and Management" attempts to spotlight the above concerns.

CRC Press
May 2024:856
Hb: 978-1-032-55391-7: **$170**
eBook: 978-1-003-43046-9
* For **full contents** and more information, visit: **www.routledge.com/9781032553917**

Internet of Things and Big Data Analytics for a Green Environment

Edited by **Yousef Farhaoui** Moulay Ismail University, Morocco**, Bharat Bhushan** Sharda University, India**, Nidhi Sindhwani** Amity University, India**, Rohit Anand** Pant Engineering College, India**, Agbotiname Lucky Imoize** Department of Electrical and Electronics Engineering, Faculty of Engineering, University of Lagos**, Anshul Verma** Banaras Hindu University, India

This book studies the evolution of sustainable green smart cities and demonstrates solutions for green environmental issues using modern industrial IoT solutions. It is a ready reference with guidelines and a conceptual framework for context-aware product development and research in the IoT paradigm and Big Data Analytics for a Green Environment.

Chapman & Hall
October 2024:368
Hb: 978-1-032-64982-5: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032649825**

Internet of Things-Based Machine Learning in Healthcare

Technology and Applications

Edited by **Prasenjit Dey , Sudip Kumar Adhikari , Sourav De , Indrajit Kar**

Internet of Medical Things (IoMT) is a system that collects data from patients with the help of different sensory inputs, e.g., accelerometer, electrocardiography, and electroencephalography. This text presents both theoretical and practical concepts related to the application of machine learning and Internet of Things algorithms in analyzing data generated through healthcare systems.

Chapman & Hall
June 2024:242
Hb: 978-1-032-48737-3: **$170**
eBook: 978-1-003-39145-6
* For **full contents** and more information, visit: **www.routledge.com/9781032487373**

Introducing Autodesk Maya

Dariush Derakhshani

Introducing Autodesk Maya is your perfect hands-on guide to start animating quickly. Using approachable, real-world exercises, you'll master the fundamentals of this animation software by following full-color screen shots step by step. Each chapter opens with a quick discussion of concepts and learning objectives, and then launches into hands-on tutorials that give you firsthand experience and a good start on preparing for the 3ds Max certification exam. Whether you're a complete beginner or migrating from another 3D application, this task-based book provides the solid grounding you need in Autodesk 3ds Max.

CRC Press
July 2024:416
Pb: 978-1-138-59054-0: **$59.95**
Hb: 978-1-138-59055-7: **$150**
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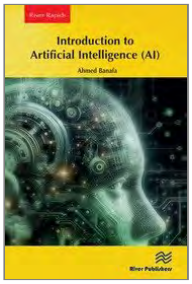
Introduction to Artificial Intelligence (AI)



Ahmed Banafa

This book covers the state of the art in AI research, including machine learning, natural language processing, computer vision, and robotics.

River Publishers
May 2024:76
Pb: 978-8-770-04186-7: **$55.95**
eBook: 978-1-003-49952-7
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Introduction to Game Programming using Processing

For Designers, Artists, Players, Non-Tech People and Everybody Else

Daniel Cermak-Sassenrath

This is an introductory textbook focusing on games (specifically interaction and graphics) as a pathway into programming. It empowers its readers to do basic programming, prototyping, creating games and other highly interactive applications, all from scratch and without any prior programming knowledge. This book is a great resource for students and aspiring professionals looking for an approachable entry into game programming.

CRC Press
June 2024:348
Pb: 978-1-032-38613-3: **$59.95**
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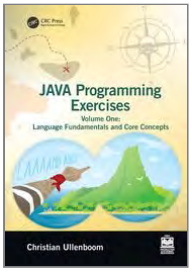
Java Programming Exercises

Volume One: Language Fundamentals and Core Concepts



Christian Ullenboom

Take the first step in raising your coding skills to the next level, and test your Java knowledge on tricky programming tasks, with the help of the pirate Captain CiaoCiao. This is the first of two volumes which provide you with everything you need to excel in your Java journey, including tricks that you should know in detail as a professional, as well as intensive training for clean code and thoughtful design that carries even complex software.

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Java Programming Exercises

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Christian Ullenboom

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Large Language Models

Concepts, Techniques and Applications

John Atkinson-Abutridy

For more than 60 years, research in this science has been focused on enabling machines to efficiently understand and generate human language. The secrets behind these technological advances lie in LLMs, whose power lies in their ability to capture complex patterns and learn contextual representations of language. How do these LLMs work? What are the available models and how are they evaluated? This book will help you answer these and many other questions. Designed to guide you step by step, with 6 chapters combining theory and practice, along with exercises in Python on the Colab platform, you will master the secrets of LLMs and their application in natural language processing.

CRC Press
October 2024:194
Pb: 978-1-032-83608-9: **$59.99**
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Learning Professional Python

Volume 2: Advanced

Usharani Bhimavarapu KONERU LAKSHMAIH EDUCATION FOUNDATION VASSDESWARAM, INDIA**, Jude D. Hemanth** Karunya University, India

Series: Chapman & Hall/CRC The Python Series

Volume 2. Learning Professional Python is a resource for students who want to learn Python even if they don't have any programming knowledge and for teachers who want a free and open curriculum to use with their students. This textbook helps the students achieve their dream job in IT Industry and teaches the students in an easy, understandable manner while strengthening coding skills. The second volume is a great resource for more advanced tips.

Chapman & Hall
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Pb: 978-1-032-61170-9: **$69.95**
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Learning Professional Python

Two Volume Set

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Learning Professional Python is a resource for students who want to learn Python even if they don't have any programming knowledge and for teachers who want a free and open curriculum to use with their students. This textbook helps the students achieve their dream job in IT Industry and teaches the students in an easy, understandable manner while strengthening coding skills.

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2ND EDITION

Learning Video Game Design on the Tabletop

Ethan Ham

Learning to design tabletop games builds a solid foundation for game designers and provides methods that can be applied towards creating paper prototypes of computer-targeted games. Presented in a step-by-step format, this book helps the reader understand how the game design skills that are acquired through creating tabletop games can be used when designing video games. Fully playable games accompany every topic so you can truly understand and experience each component that goes into game creation.

CRC Press
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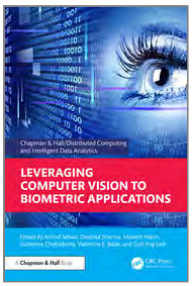
Leveraging Computer Vision to Biometric Applications



Edited by **Arvind Selwal , Deepika Sharma** Central University of Jammu, India**, Mukesh Mann** IIIT Sonepat, India**, Sudeshna Chakraborty** Galgotias Uni, G.Noida**, Valentina E. Balas** Aurel Vlaicu University of Arad and Romanian Academy of Scientists, Romania**, Ouh Eng Lieh**

Series: Chapman & Hall/Distributed Computing and Intelligent Data Analytics

Computer vision is an effective solution in a diverse range of real-life applications. With the advent of the machine and deep learning paradigms, this book adopts machine and deep learning algorithms to leverage digital image processing for designing accurate biometrical applications. It presents the advancements made in the computer vision to biometric applications design approach using emerging technologies. It discusses the challenges of designing efficient and accurate biometric-based systems, which is a key issue that can be tackled via computer vision-based techniques. The book is for academicians, researchers working on computer vision and biometrics applications

Chapman & Hall
October 2024:408
Hb: 978-1-032-61464-9: **$120**
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Machine Learning and Python for Human Behavior, Emotion, and Health Status Analysis

Md Zia Uddin Sustainable Communication Technologies Department, SINTEF Digital, Oslo, Norway

The book strikes a harmonious balance between theoretical foundations and practical coding, and caters to a diverse audience, including smart home enthusiasts and researchers. It also prioritizes real-world applications, ensuring readers can immediately apply the knowledge gained to enhance smart home functionalities. The book covers Python basics, feature extraction, deep learning, and XAI, the book provides a comprehensive guide, offering an overall understanding of smart home applications.

CRC Press
August 2024:252
Hb: 978-1-032-54478-6: **$99.95**
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Mathematical Foundations of Computer Science

Ashwin Lall Denison University, 100 W College Street, Granville, OH 43023, USA

Mathematical Foundations of Computer Science introduces students to the discrete mathematics needed later in their Computer Science coursework with theory of computation topics interleaved throughout. Students learn about mathematical concepts just in time to apply them to theory of computation ideas. For instance, sets motivate the study of finite automata, direct proof is practised using closure properties, induction is used to prove the language of an automaton, and contradiction is used to apply the pumping lemma.

Chapman & Hall
November 2024:236
Pb: 978-1-032-46787-0: **$59.99**
Hb: 978-1-032-46789-4: **$150**
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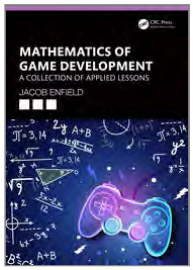
Mathematics of Game Development

A Collection of Applied Lessons



Jacob Enfield George Mason University, Virginia Serious Game Institute, USA

This introductory textbook introduces students to mathematical concepts and helps them to understand how they apply to the field of game development. The book covers mathematical concepts commonly used in game development while providing application of the concepts in the industry-standard Unity game engine. This book will be ideal for any game development student looking to gain a grounding in the most relevant mathematical concepts to support their trade. It will also be useful as a stepping stone to digesting more advanced mathematical concepts for game development.

CRC Press
April 2024:258
Pb: 978-0-367-52771-6: **$69.95**
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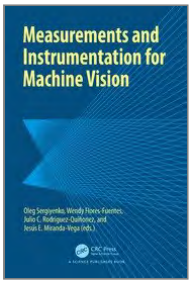
Measurements and Instrumentation for Machine Vision



Edited by **Oleg Sergiyenko** Autonomous Uni of Baja California, Mexico**, Wendy Flores-Fuentes** UABC, Mexico **, Julio Rodriguez-Quiñonez** UABC, Mexico**, Jesús E Miranda-Vega** Nat Tech Ins of Mexico

A comprehensive reference book that addresses the field of machine vision and its significance in cyber-physical systems. It explores the multidisciplinary nature of machine vision, involving electronic and mechatronic devices, artificial intelligence algorithms, embedded systems, control systems, robotics, interconnectivity, data science, and cloud computing. The book aims to provide advanced students, early career researchers, and established scholars with state-of-the-art knowledge and novel content related to the implementation of machine vision in engineering, scientific knowledge, and technological innovation.

CRC Press
June 2024:466
Hb: 978-1-032-38161-9: **$190**
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Metaheuristics and Reinforcement Techniques for Smart Sensor Applications

Adwitiya Sinha TERI School of Advanced Studies, India**, Manju** Jaypee Institute of Information Technology, India**, Samayveer Singh** Dr B R Ambedkar National Institute of Technology, India

This book discusses the fundamentals of wireless sensor networks, the prevailing methods, and trends of smart sensor applications. It presents analytical modelling to foster the understanding of network challenges in developing protocols for next-generation communication standards.

Chapman & Hall
October 2024:248
Hb: 978-1-032-54235-5: **$170**
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Metaheuristics for Enterprise Data Intelligence

Edited by **Kaustubh Vaman Sakhare , Vibha Vyas , Apoorva S Shastri**

Series: Advances in Metaheuristics

With the emergence of the Data Economy, information has become integral to business excellence. Converting massive datasets into insightful information plays an important role in developing better business solutions. Optimization of such systems is crucial to leveraging the best outcomes and conclusions. To this end, AI-based nature inspired optimization methods or approximation-based optimization methods are becoming very powerful. This book provides a systematic discussion of AI-based Metaheuristics application in a wide range of areas.

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Methodology to Improve Control Plane Security in SDN Environments

Wendwossen Desalegn , Javed Shaikh , Bayisa Taye

This book unveils a blueprint for safeguarding the very backbone of modern communication networks. It offers a roadmap towards fortifying SDN infrastructures against the relentless onslaught of cyber threats, ensuring resilience and reliability in an ever-evolving digital landscape. This reference elucidates an innovative approach devised to identify and mitigate the inherent risks associated with the OpenFlow protocol and its POX controller. Validated through rigorous simulations conducted within controlled environments utilizing the Mininet tool and SDN controller, the methodology unfolds, showcasing the intricate dance between theory and practice.

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Multifaceted approaches for Data Acquisition, Processing & Communication

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The objective of the conference is to bring to focus the recent technological advancements across all the stages of data analysis including acquisition, processing, and communication. Advancements in acquisition sensors along with improved storage and computational capabilities, have stimulated the progress in theoretical studies and state-of-the-art real-time applications involving large volumes of data.

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Multimodal Biometric Identification System

Case Study of Real Time Implementation

Sampada Dhole BVCOEW, India**, Vinayak Bairagi**

This book presents a novel method of multimodal biometric fusion using a random selection of biometrics, which covers a new method of feature extraction, a new framework of sensor level and feature level fusion. Most of the biometric systems presently use unimodal systems which have several limitations. Multimodal systems can increase the matching accuracy of a recognition system. This monograph shows how the problems of unimodal systems can be efficiently dealt with and focuses on multimodal biometric identification and sensor-level feature-level fusion. It discusses fusion in biometric systems to improve performance.

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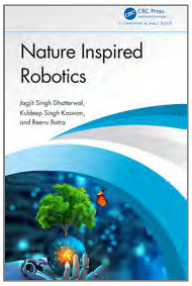
Nature Inspired Robotics



Jagjit Singh Dhatterwal Koneru Lakshmaiah Education Foundation**, Kuldeep Singh Kaswan** Galgotias Univ**, Reenu Batra** SGT University, Gurugram, India

This book introduces the theories and methods of Nature-Inspired Robotics in artificial intelligence. Software and hardware technologies, alongside theories and methods, illustrate the application of bio-inspired artificial intelligence. It includes discussions on topics such as Robot Control Manipulators, Geometric Transformation, Robotic Drive Systems and Nature Inspired Robotic Neural System. Elaborating upon recent progress made in five distinct configurations of nature-inspired computing, it explores the potential applications of this technology in two specific areas: neuromorphic computing systems and neuromorphic perceptual systems.

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Network Optimization in Intelligent Internet of Things Applications

Principles and Challenges

Edited by **Payal Khurana Batra , Pawan Singh Mehra , Sudeep Tanwar** Nirma University, Ahmedanad, India

This book sheds light on the optimisation methods that form the basis of effective communication between networked devices. It is an excellent resource as it provides readers with a thorough understanding of the methods, ideas, and tactics essential to attaining seamless connectivity and improving performance. This book provides a comprehensive understanding of the principles, challenges, and cutting-edge solutions in IoT network optimisation for all kinds of readers with different level of understanding.

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Next-Gen Technologies in Computational Intelligence

Proceeding of the International Conference on Next-Gen Technologies in Computational Intelligence (NGTCA 2023)

Edited by **R. Anandan , M. Senthil Kumar , Biji C. L. , Vicente García Díaz , Souvik Pal**

Series: Conference Proceedings Series on Intelligent Systems, Data Engineering, and Optimization

The Proceeding includes the research contribution from the International Conference on Next-Gen Technologies in Computational Intelligence (NGTCA 2023) held on March 24th 2023 at Vels Institute of Science, Technology and Advanced Studies. NGCTA 2023 is the flagship conference of the Computer Society of India (Region 7).

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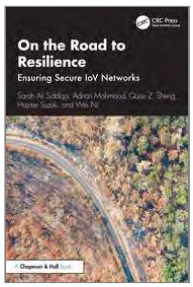
On the Road to Resilience

Ensuring Secure IoV Networks



Sarah Ali Siddiqui CSIRO Early Research Career Fellow, Australia**, Adnan Mahmood** Macquarie University, Australi**, Quan Z. Sheng** Macquarie University, Australia**, Hajime Suzuki** Principal Research Scientist at CSIRO, Australia**, Wei Ni** Principal Scientist at CSIRO, Australia

This book explores trust management within the Internet of Vehicles (IOV) networks, a paradigm crucial for safety-critical applications and a resource for non-safety applications and efficient traffic flows. However, the existence of malicious entities and the potential spread of harmful information within the network impairs its performance and resents a danger to both passengers and pedestrians. This book tackles the challenges regarding the quantification of trust attributes and misbehavior detection threshold definition within the dynamic and distributed IoV environment. An essential guide for industry professionals and scholars in automative systems and cybersecurity.

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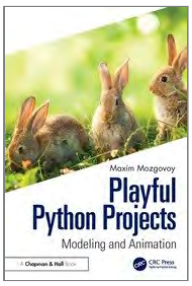
Playful Python Projects

Modeling and Animation



Mozgovoy Maxim The University of Aizu

This book aims to take beginner and intermediate programming hobbyists to the next level by challenging them with exciting bite-size projects rooted in actual scientific and engineering problems. The variety of discussed subjects and creative project ideas make the book a perfect choice for aspiring coders thinking where to apply their growing skills.

Chapman & Hall
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Open Data for Everybody

Using Open Data for Social Good

Nathan Coyle

This book argues a simple point: if open data and the digital aspects that support it aren't accessible to all, then what is the point of it? Deeply rooted in grassroots social activism, this book explores a journey that led to collaboration with governments globally, based on real hands-on work, aiming to democratize open data. Through narrative storytelling, we share insights, best practices, procedures, and community-driven approaches. Regardless of your skill set or organization size, from grassroots workers to third-sector professionals and government officers, join us to reshape the perception of open data, fostering change in neighborhoods.

Chapman & Hall
June 2024:198
Pb: 978-1-032-71504-9: **$39.95**
Hb: 978-1-032-72462-1: **$99.95**
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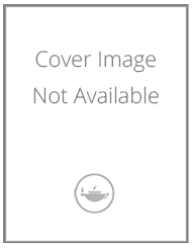
2ND EDITION

Programming Language Explorations



Ray Toal , Sage Angelica Strieker , Marco Berardini

Programming Language Explorations helps its readers gain proficiency in programming language practice and theory by presenting both example-focused, chapter-length explorations of fourteen important programming languages and detailed discussions of the major concepts transcending multiple languages. A language-by-language approach is sandwiched between an introductory chapter that motivates and lays out the major concepts of the field and a final chapter that brings together all that was learned in the middle chapters into a coherent and organized view of the field.

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Paper Time Machines

Critical Game Design and Historical Board Games

Maurice W. Suckling

This book looks at a range of topics and design issues pertinent to the history, current state of design, and to developing trends within the hobby, industry, and the adjacent field of game scholarship. The book provides a definitive take on the current state of board wargaming, deeply informed by where the field came from and how it got to now.

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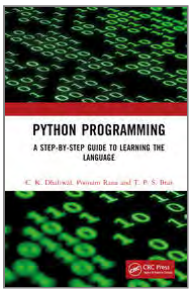
Python Programming

A Step-by-Step Guide to Learning the Language



C. K. Dhaliwal , Poonam Rana , T. P. S. Brar

This book explores Python's rich history, dynamic features, and its wide-ranging applications in web development, data science, and machine learning. From its installation process to interactive help, readers embark on a journey through Python's unique characteristics and its distinctions from other programming languages. It lays a solid foundation for beginners and seasoned programmers alike. Print edition not for sale in South Asia (India, Sri Lanka, Nepal, Bangladesh, Pakistan or Bhutan)

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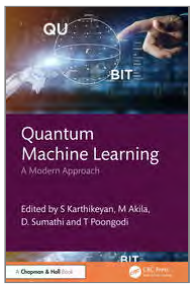
Quantum Machine Learning

A Modern Approach



Edited by **S Karthikeyan** KPR Institute of Engineering and Technology, India**, M Akila** KPR Institute of Engineering and Technology, India**, D. Sumathi , T Poongodi**

This text presents the research into and application of machine learning in quantum computation, known as quantum machine learning (QML). It presents a comparison of quantum machine learning, classical machine learning, and traditional programming, along with the usage of quantum computing, towards improving traditional machine learning algorithms through case-studies.

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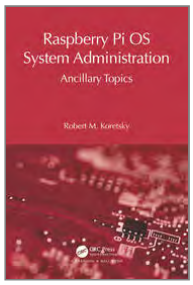
Raspberry Pi OS System Administration

Ancillary Topics



Robert M Koretsky

Series: Raspberry Pi OS System Administration with systemd

The fourth volume in a new series exploring the basics of Raspberry Pi Operating System administration, this instalment builds on the insights provided in Volumes 1, 2 and 3 to provide a compendium of easy-to-use and essential Raspberry Pi OS system administration for the novice user, with specific focus on upstream Debian Bookworm release and Raspberry Pi 5.

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Pb: 978-1-032-75296-9: **$59.95**
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Raspberry Pi OS Text Editors, git, and LXC

A Practical Approach

Robert M Koretsky

Series: Raspberry Pi OS System Administration with systemd

The third volume in a new series exploring the basics of Raspberry Pi Operating System administration, this installment builds on the insights provided in Volumes 1 and 2 to provide a compendium of easy-to-use and essential Raspberry Pi OS system administration for the novice user, with specific focus on Text Editors, git/GitHub and LXC/LXD. This book is aimed at students and practitioners looking to maximise their use of the Raspberry Pi OS. With plenty of practical examples, projects and exercises.

Chapman & Hall
May 2024:328
Pb: 978-1-032-59691-4: **$59.95**
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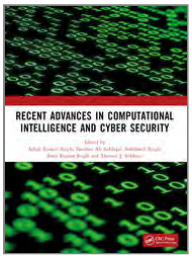
Recent Advances in Computational Intelligence and Cyber Security

The International Conference on Computational Intelligence and Cyber Security



Edited by **Ashok Kumar Singh , Zeeshan Ali Siddiqui , Siddharth Singh , Amit Kumar Singh , Tanveer J. Siddiqui**

In the ever-accelerating tapestry of our digital age, the symbiotic relationship between computational intelligence and cyber security has become the linchpin of progress. The relentless pace of technological evolution and the ceaseless emergence of cyber threats demand not only adaptation but also an exploration of the forefronts of innovation and defence.

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Resource Discovery, Navigability and Trust Management Techniques for IoT and SIoT

Venugopal K R , Roopa M S , Santosh Pattar

A ready reference for the next-generation discovery techniques, this book presents advanced research findings on resource discovery, network navigability, and trust management on the Internet of Things (IoT) and Social Internet of Things (SIoT) ecosystems. It discusses the benefits of integrating social networking concepts into the Internet of Things to find the preferable, reliable, scalable, and near-optimal detection of things or services. It explores the concepts of the Social Internet of Things in different domains of IoT, such as the Internet of Vehicles and the Industrial Internet of Things.

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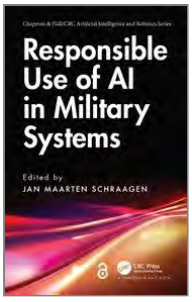
Responsible Use of AI in Military Systems



Edited by **Jan Maarten Schraagen**

Series: Chapman & Hall/CRC Artificial Intelligence and Robotics Series

Responsible Use of AI in Military Systems lays out the land for what is required to develop and use AI in military systems in a responsible manner. Current developments in the emerging field of Responsible AI, as applied to military systems in general (not merely weapons systems) are discussed. The book takes a broad and transdisciplinary scope, by including contributions from the fields of philosophy, law, human factors, AI, systems engineering, and policy development.

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Revolutionizing Communication

The Role of Artificial Intelligence

Edited by **Raquel V. Benítez Rojas , Francisco Julián Martínez-Cano**

"In 'Revolutionizing Communication: The Role of Artificial Intelligence,' we delve into thepowerful impact of AI on how we communicate. This book explores AI's influence onbusiness, education, healthcare, and personal interactions, offering valuable insights forprofessionals and curious minds alike. The primary audience for the book encompasses a diverse range of individuals and professionals who are interested in understanding the impact of artificial intelligence on communication.

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RNA: Computational Methods for Structure, Kinetics, and Rational Design: Volume One

Peter G. Clote Bosto College, MA, USA

Series: Chapman & Hall/CRC Computational Biology Series

RNA Structure, Kinetics, and Rational Design is a comprehensive treatment of computational methods concerning the secondary structure, folding kinetics and rational design of RNA. It discusses basic principles of statistical thermodynamics, optical melting experiments for energy parameter estimation, as well as dynamic programming, Monte Carlo and constraint programming methods, Markov state models (MSMs), and the requisite mathematics. Each chapter includes problems and complete solutions (sometimes including computer programs using Python and extensions Numpy and Scipy). This book provides the nuts, bolts and tools to take the next steps in computational RNA synthetic biology.

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Robotics

From Theory to Practice

Chao Chen Monash University**, Wesley Au** Department of Mechanical and Aerospace Engineering, Monash University

This book bridges the gap between robotic theory and practical applications in the modelling, planning and control of modern industrial robots. This book is a valuable resource for university students at all levels, as well as professionals who are interested in robotics and have a limited background in engineering or mathematics.

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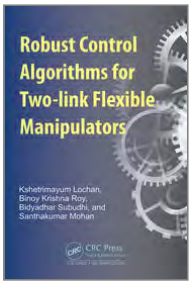
Robust Control Algorithms for Two-link Flexible Manipulators



Kshetrimayum Lochan IIT Palakkad, India**, Binoy Krishna Roy** NIT Silchar, India**, Bidyadhar Subudhi** IIT Goa, India**, Santhakumar Mohan**

Various modelling and control of two-link flexible manipulators are presented in this book. The lumped parameter modelling method and the assumed modes method modelling are comprehensively reviewed. The book also reviews the trajectory tracking problem and tip trajectory tracking problem along with the suppression of tip deflection of the links. An exponential time varying signal and a chaotic signal are considered as the desired trajectories. The identical/ non-identical slave manipulator is synchronised with the controlled master manipulator so that the slave manipulator indirectly follows the desired manipulator.

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Shader Writing in Open Shading Language

with RenderMan® Examples

Mitch Prater

Shaders make renderings look the way they look. They represent the intersection between the artistry and technology of rendering. The ability to program shaders is a foundational skill in the computer graphics field and its applications; however that skill is largely, if not entirely, self-taught. OSL Shaders for RenderMan is a treatise on shader writing and development that hopes to remedy the current lack of material on this important area of RenderMan expertise. It covers the entire range of independent variables upon which all shaded pattern generation is based.

CRC Press
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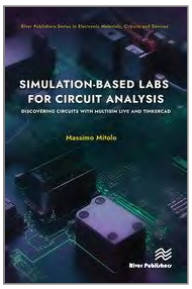
Simulation-based Labs for Circuit Analysis

Discovering Circuits with Multisim Live and Tinkercad



Massimo Mitolo

Series: River Publishers Series in Electronic Materials, Circuits and Devices

Aspiring engineers and technicians, circuit enthusiasts, and educators will find ""Simulation-based Labs for Circuit Analysis"" an indispensable resource for unlocking the boundless possibilities of circuit analysis in the digital age. Whether you are a student seeking to excel in your studies or a professional looking to refine your engineering skills, this book will empower you to innovate, explore, and experiment without limits.

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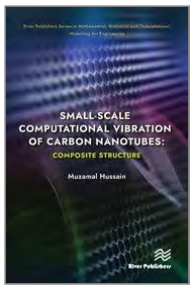
Small-scale Computational Vibration of Carbon Nanotubes: Composite Structure



Muzamal Hussain

Series: River Publishers Series in Mathematical, Statistical and Computational Modelling for Engineering

This book presents orthotropic vibration modeling and analysis of carbon nanotubes (CNTs) which be helpful in applications such as oscillators and in non-destructive testing, and also vibrations characteristics of armchair double-walled CNT by means of nonlocal elasticity shell model. The nonlocal shell model is established by inferring the nonlocal elasticity equations in to Kelvin's theory, which is our particular motivation. The suggested method to investigate the solution of fundamental Eigen relations is wave propagation, which is a well-known and efficient technique to develop the fundamental frequency equations.

River Publishers
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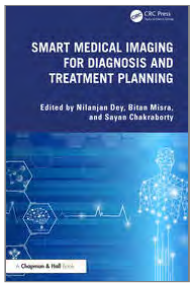
Smart Medical Imaging for Diagnosis and Treatment Planning



Edited by **Nilanjan Dey** JIS Univ, Kolkata, India**, Bitan Misra , Sayan Chakraborty**

This book presents advanced research on smart health technologies, focusing upon the innovative transformations in diagnosis and treatment planning using medical imaging and data analysed by data science techniques. It shows how smart health technologies leverage artificial intelligence (AI) and big data analytics to provide more accurate and efficient diagnosis and treatment planning. In search for innovative and novel methods and techniques for health technologies and medical data processing, the book discusses applications of Artificial Intelligence, Data Science, Machine Learning, Deep Learning, the Internet of Things, Big Data, Cloud Computing.

Chapman & Hall
July 2024:258
Hb: 978-1-032-73502-3: **$180**
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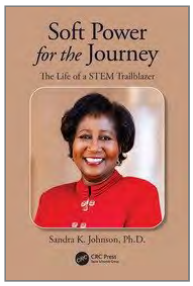
Soft Power for the Journey

The Life of a STEM Trailblazer



Sandra K. Johnson

This is a story of an African American woman working at the highest levels in STEM. Dr. Sandra K. Johnson earned a Ph.D. in electrical and computer engineering from Rice University in May 1988, the first black woman to do so. The story narrates the inextricable human dimension of dealing with various personal and familial challenges that people naturally encounter—with the highs and lows, and exhilarations and disappointments. It is a heartwarming, compelling story designed to encourage, be aspirational and awe-inspiring, and uplift the spirits of a broad and diverse readership.

CRC Press
June 2024:324
Pb: 978-1-032-72425-6: **$29.95**
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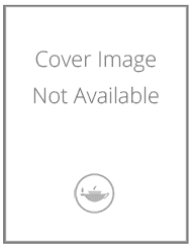
Storytelling for Spatial Computing and Mixed Reality

The Art of Augmenting Imagination



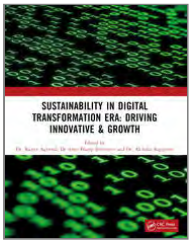
Rob Morgan

This is a clear, accessible manual of storytelling techniques and learning activities for spatial computing and mixed reality. It covers the key skills that the next generation of digital storytellers will need, providing readers with practical tools for creating digital stories and adventures out in the real world. This book will be invaluable to students of game design, experience design and interactive narrative. It provides theories, best-practices and case-studies also relevant to creative professionals in games, XR, immersive theatre, theme parks and brand experience.

CRC Press
November 2024:288
Pb: 978-1-032-45927-1: **$59.99**
Hb: 978-1-032-45928-8: **$160**
* For **full contents** and more information, visit: **www.routledge.com/9781032459271**

Sustainability in Digital Transformation Era: Driving Innovative & Growth

International Conference on Sustainability in Digital Transformation Era: Driving Innovative & Growth

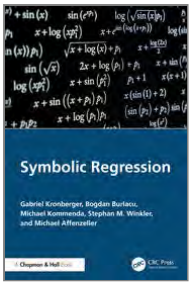


Edited by **Dr. Rajeev Agrawal , Dr Arun Pratap Srivastava , Dr. Akihiko Sugiyama**

This potent technology holds the potential for significant positive changes, particularly in healthcare where the introduction of GPT and chatbot models opens promising avenues for disease treatment and technological innovation.

CRC Press
September 2024:442
Pb: 978-1-032-87726-6: **$59.99**
* For **full contents** and more information, visit: **www.routledge.com/9781032877266**

Symbolic Regression



Gabriel Kronberger , Bogdan Burlacu , Michael Kommenda , Stephan M. Winkler , Michael Affenzeller

Symbolic regression (SR) is one of the most powerful machine learning techniques that produces transparent models, searching the space of mathematical expressions for a model that represents the relationship between the predictors and the dependent variable without the need of taking assumptions about the model structure. Currently, the most prevalent learning algorithms for SR are based on genetic programming (GP), an evolutionary algorithm inspired from the well-known principles of natural selection. This book is an in-depth guide to GP for SR, discussing its advanced techniques as well as examples of applications in science and engineering.

Chapman & Hall
August 2024:312
Hb: 978-1-138-05481-3: **$99.95**
* For **full contents** and more information, visit: **www.routledge.com/9781138054813**

Systems and Implemented Technologies for Data-Driven Innovation, addressing Data Spaces and Marketplaces Semantic Interoperability Needs

i3-MARKET Series - Part II: Data Economy, Models, Technologies and Solutions

Edited by **Martín Serrano , Achille Zappa , Waheed Ashraf , Edgar Friess , Iván Martínez , Alessandro Amicone , Pedro Maló , Márcio Mateus , Justina Bieliauskaite , Marina Cugurra**

Series: River Publishers Series in Computing and Information Science and Technology

This book starts reviewing the basic technological principles and software best practices and standards for implementing and deploying data spaces and data marketplaces.

River Publishers
August 2024:206
Hb: 978-8-770-04171-3: **$126.5**
* For **full contents** and more information, visit: **www.routledge.com/9788770041713**

Technological Advancement in Internet of Medical Things and Blockchain for Personalized Healthcare

Applications and Use Cases

Edited by **A Prasanth** Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, India**, Lakshmi D , Rajesh Kumar Dhanaraj** Galgotias Uni.**, Balamurugan Balusamy** Shiv Nadar Uni.**, Sherimon P C**

Primarily written for graduate students and academic researchers working in computer science, engineering, biomedical and electrical engineering, this text presents advanced enabling technologies of the internet of medical things in personalized healthcare. It discusses topics such as a smart contract-based trust management framework for enhancing security in the internet of medical things environment, and an access control mechanism for blockchain-enabled internet of medical things. It also includes case studies on connecting patient-centric blockchains with multilayer networks and crypto hash-based malware detection in the internet of medical things framework.

CRC Press
May 2024:216
Hb: 978-1-032-52154-1: **$120**
eBook: 978-1-003-40545-0
* For **full contents** and more information, visit: **www.routledge.com/9781032521541**

Tabletop Game Accessibility

Meeple Centred Design

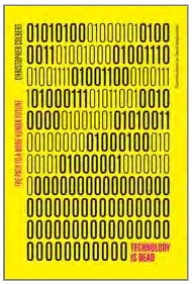
Michael James Heron Chalmers University of Technology / University of Gothenburg, Sweden

This foundational resource on the topic of tabletop game accessibility provides actionable guidelines on how to make games accessible for people with disabilities. The book contextualizes this practical guidance within a philosophical framework of how the relatively abled can ethically address accessibility issues within game design. This book will be of great interest to all professional tabletop and boardgame designers, as well as digital game designers and designers of other physical products.

CRC Press
April 2024:248
Pb: 978-1-032-54159-4: **$59.95**
Hb: 978-1-032-54147-1: **$160**
eBook: 978-1-003-41543-5
* For **full contents** and more information, visit: **www.routledge.com/9781032541594**

Technology is Dead

The Path to a More Human Future



Chris Colbert

Technology is Dead is a book of both challenge and hope, written for those who are able or willing to lead us out of our global predicament. It is for the politicians, CEOs, community leaders, everyday parents and young people who understand that we must change our ways to ensure a sustainable future for all living things and the planet we rely on. The book's premise is that technology (like capitalism) has been an unprecedented force for prosperity, while at the same time bringing unrelenting, and unplanned downsides.

CRC Press
August 2024:238
Pb: 978-0-367-54622-9: **$29.95**
Hb: 978-0-367-54623-6: **$120**
* For **full contents** and more information, visit: **www.routledge.com/9780367546229**

Technical Innovation, solving the Data Spaces and Marketplaces Interoperability Problems for the Global Data-Driven Economy

i3-MARKET Series - Part III: The i3-MARKET FOSS Handbook

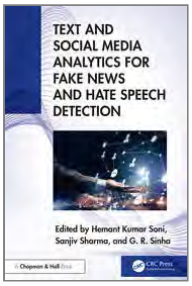
Edited by **Martín Serrano , Achille Zappa , Waheed Ashraf , Edgar Friess , Iván Martínez , Alessandro Amicone , Pedro Maló , Márcio Mateus , Justina Bieliauskaite , Marina Cugurra**

Series: River Publishers Series in Computing and Information Science and Technology

This book focuses on the best practices and simplest software methods and mechanisms that allow the i3-MARKET backplane reference implementation to be instantiated, tested and validated.

River Publishers
August 2024:190
Hb: 978-8-770-04173-7: **$126.5**
* For **full contents** and more information, visit: **www.routledge.com/9788770041737**

Text and Social Media Analytics for Fake News and Hate Speech Detection



Edited by **Hemant Kumar Soni** Amity University, India**, Sanjiv Sharma** Madhav Institute of Technology and Science, India**, G. R. Sinha** International Institute of Information Technology Bangalore, India

Identifying and stopping the dissemination of fabricated news, hate speech, or deceptive information camouflaged as legitimate news poses a significant technological hurdle. This book presents emergent methodologies and technological approaches of natural language processing through machine learning for counteracting the spread of fake news and hate speeches on social media platforms. The text is for professionals and scholars of various disciplines interested in fake news and hate speech detection.

Chapman & Hall
August 2024:318
Hb: 978-1-032-52662-1: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032526621**

The Cores of Game Design

Mechanics, Economics, Narrative, and Aesthetics

Yvens R. Serpa

This book considers the four essential cores of game design: Mechanics, the interactive elements that allow players to be part and interact with the game itself; Economy, the resources and numerical concepts that will enable players to evaluate and consider the options in the game, creating strategy, risk, and fun; Narrative, the textual features that enable players to create and generate meaning for the game and its parts; and the Aesthetics, the audiovisual elements that allow players to experience the game through their senses and feelings. This book will be of great interest to students, indie game developers, and aspiring early-career designers.

CRC Press
October 2024:242
Pb: 978-1-032-39754-2: **$59.95**
Hb: 978-1-032-39751-1: **$160**
* For **full contents** and more information, visit: **www.routledge.com/9781032397542**

The Future of Human-Computer Integration

Industry 5.0 Technology, Tools, and Algorithms

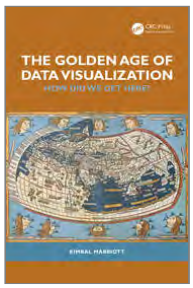
Edited by **Norliza Katuk** School of Computing Universiti Utara, Malaysia**, Roberto Vergallo** University of Salento, Italy**, Tito Sugiharto** Universitas Kuningan, Indonesia

The book, The Future of Human-Computer Integration: Industry 5.0 Technology, Tools and Algorithms, provides a valuable insight into how Industry 5.0 technologies, tools, and algorithms can revolutionise industries and drive innovation. The book has been written for technology professionals and practitioners, especially ones in the healthcare, smart systems and the oil and gas sector sectors. It would serve as a useful reference for students studying in such advanced courses as digital technology, digital transformation, emergent technologies, innovation through new technologies.

CRC Press
June 2024:170
Pb: 978-1-032-76578-5: **$59.95**
Hb: 978-1-032-76582-2: **$79.95**
eBook: 978-1-003-47972-7
* For **full contents** and more information, visit: **www.routledge.com/9781032765785**

The Golden Age of Data Visualization

How Did We Get Here?



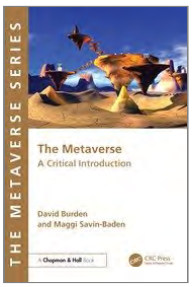
Kimbal Marriott Monash University, Australia

This book explains how and why this has happened. It details the evolution of information graphics, the kinds of graphics at the core of data visualization—maps, diagrams, charts, scientific and medical images—from prehistory to the present day. This book is written for data visualization researchers and professionals, and anyone interested in data visualization and the way we use graphics to understand and think about the world.

CRC Press
September 2024:384
Pb: 978-1-032-83077-3: **$59.95**
Hb: 978-1-032-83079-7: **$170**
* For **full contents** and more information, visit: **www.routledge.com/9781032830773**

The Metaverse

A Critical Introduction

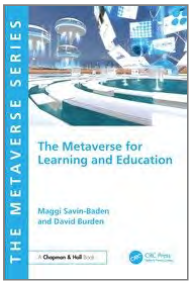


David Burden , Maggi Savin-Baden University of Worcester

The Metaverse: A Critical Introduction provides a clear, concise and well-grounded introduction to the concept of the Metaverse, its history, the technology, the opportunities, the challenges and how it is having an impact almost every facet of society. The book serves as a standalone introduction to the Metaverse, and as an introduction to the range of topics that will be covered by the specialist volumes in The Metaverse Series. This book is a primer and Metaverse reader, drawing on academic research, practical and commercial experiences and taking inspiration from the science fiction origins and treatments of the Metaverse.

Chapman & Hall
September 2024:264
Pb: 978-1-032-49788-4: **$49.95**
Hb: 978-1-032-49789-1: **$125**
* For **full contents** and more information, visit: **www.routledge.com/9781032497884**

The Metaverse for Learning and Education

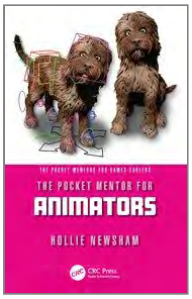


Maggi Savin-Baden University of Worcester**, David Burden**

Accompanying The Metaverse: A Critical Introduction in CRC Press' new The Metaverse Series, this book explores the ways in which the Metaverse can be used for education and learning, as well as how it is different from VR application development. For example, institutions and tutors can make use of the Metaverse space to represent themselves in it or create their own content and share experiences, while students can access a wider range of material, learn within appropriate settings and create content to support their own and others' learning.

Chapman & Hall
September 2024:152
Pb: 978-1-032-53833-4: **$49.95**
Hb: 978-1-032-53834-1: **$125**
* For **full contents** and more information, visit: **www.routledge.com/9781032538334**

The Pocket Mentor for Animators



Hollie Newsham

Series: The Pocket Mentors for Games Careers

Want to work as an Animator in the video games industry? Then this is the book for you; a friendly guide to understanding the industry that offers practical advice and guidance to prepare you for the challenge! It covers every step of the way from picking universities through to your first year on the job. It outlines job application processes and includes animator-specific tips as well! Drawing from personal experience, along with interviews from 10 incredibly talented people within the industry, this book ensures you feel supported and ready to enter the industry. A beginner's guide to life as an Animator, this book is an invaluable resource for aspiring and seasoned pros alike.

CRC Press
July 2024:140
Pb: 978-1-032-38327-9: **$39.95**
Hb: 978-1-032-38397-2: **$120**
eBook: 978-1-003-34484-1
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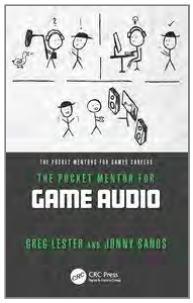
The Pocket Mentor for Game Audio



Greg Lester , Jonny Sands

Series: The Pocket Mentors for Games Careers

Want to work as an audio professional in the video games industry? Then this is the book is for you. This book provides all the essential information and guidance you need to understand the industry and get your foot on the ladder. This book will be of great interest to all beginner and aspiring game audio professionals, as well as more experienced game audio professionals that are looking for new ways to approach their career planning.

CRC Press
October 2024:148
Pb: 978-1-032-43788-0: **$39.95**
Hb: 978-1-032-43787-3: **$120**
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The WebGPU Sourcebook

High-Performance Graphics and Machine Learning in the Browser

Matthew Scarpino

The WebGPU Sourcebook: High-Performance Graphis and Machine Learning in the Browser explains how to code web applications that use WebGPU to access the client's graphics processing unit (GPU). This makes it possible to render graphics at high-speed in a browser and perform computationally-intensive tasks such as machine learning.The first part introduces WebGPU at a high level, without graphical rendering or computation. The chapters in the second part are focused on graphical rendering. The third part of the book focuses on compute shaders.

CRC Press
October 2024:384
Pb: 978-1-032-72667-0: **$59.99**
Hb: 978-1-032-72840-7: **$150**
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Towards Human-Level Artificial Intelligence

How Neuroscience Can Inform the Pursuit of Artificial General Intelligence or General AI

Eitan Michael Azoff

This book has a dual purpose. First, it provides a multi-disciplinary research survey across all branches of neuroscience and AI research that relate to the book's mission of bringing AI research closer to building a human-level AI (HLAI) system. It provides an encapsulation of key ideas and concepts, generally without going into tutorial explanations, but providing all the references for the reader to delve deeper, and including coverage of pioneering research which is not yet available in textbooks. Second, the final part of the book brings together key concepts from the survey and makes suggestions for building HLAI.

CRC Press
October 2024:150
Pb: 978-1-032-82907-4: **$54.95**
Hb: 978-1-032-83130-5: **$150**
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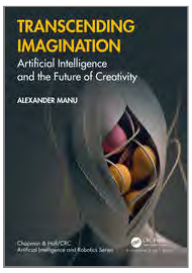
Transcending Imagination

Artificial Intelligence and the Future of Creativity



Alexander Manu

Series: Chapman & Hall/CRC Artificial Intelligence and Robotics Series

Transcending Imagination is a vision into a new world of artifacts of beauty whose intention is articulated by a human and is manifested by a neural network. The book examines the potential for AI to both enhance and transform the creative process, exploring the impact it will have on the arts, design, entertainment, and in the education of artists and designers.

Chapman & Hall
April 2024:264
Pb: 978-1-032-58402-7: **$59.95**
Hb: 978-1-032-58453-9: **$150**
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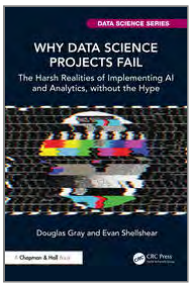
Why Data Science Projects Fail

The Harsh Realities of Implementing AI and Analytics, without the Hype



Douglas Gray Oakland University, USA**, Evan Shellsear**

Series: Chapman & Hall/CRC Data Science Series

The field of artificial intelligence, data science and analytics is crippling itself. Exaggerated promises of unrealistic technologies, simplifications of complex projects and marketing hype are leading to an erosion of trust in one of our most critical approaches to making decisions: data driven.

Chapman & Hall
September 2024:214
Pb: 978-1-032-66030-1: **$59.99**
Hb: 978-1-032-66133-9: **$150**
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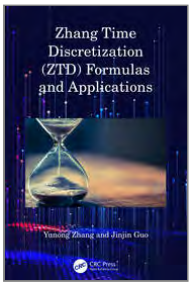
Zhang Time Discretization (ZTD) Formulas and Applications



Yunong Zhang , Jinjin Guo

The book aims to solve the discrete implementation problems of continuous-time neural network models while improving the performance of neural networks by using various Zhang Time Discretization (ZTD) formulas. It summarizes and presents the systematic derivations and complete researches of ZTD formulas from special 3S-ZTD formulas to general NS-ZTD formulas, which finally leads to the proposed discrete-time Zhang neural network (DTZNN) algorithms. It will benefit engineers, senior undergraduates, graduate students, and researchers of neural networks, computer mathematics, computer science, artificial intelligence, numerical algorithms, optimization, robotics, and simulation modeling.

CRC Press
July 2024:355
Hb: 978-1-032-80624-2: **$170**
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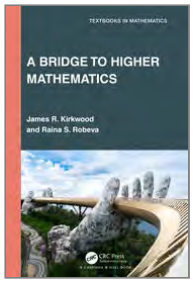
A Bridge to Higher Mathematics



James R. Kirkwood Sweet Briar College, Sweet Briar, VA 24595**, Raina S. Robeva** Randolph-Macon College, Ashland, VA USA

Series: Textbooks in Mathematics

The goal of this unique text is to provide an "experience" that would facilitate a better transition for mathematics majors to the advanced proof-based courses required for their major. If you "love mathematics, but I hate proofs" this book is for you. Example-based courses such as introductory Calculus transition somewhat abruptly, and without a warning label, to proof-based courses, and may leave students with the unpleasant feeling that a subject they loved has turned into material they find hard to understand.

Chapman & Hall
May 2024:258
Pb: 978-1-032-61184-6: **$54.99**
Hb: 978-1-032-62385-6: **$125**
eBook: 978-1-032-62384-9
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A Concise Introduction to Financial Derivatives

Eben Maré

A Concise Introduction to Financial Derivatives seeks to present financial derivatives in a manner that requires minimal mathematical background. Readers will obtain, in a quick and engaging way, a working knowledge of the field and a collection of practical working insights. The book would be ideal for aspiring young practitioners, advanced undergraduates and masters-level students who require a concise and practice-led introduction to financial derivatives.

Chapman & Hall
November 2024:288
Hb: 978-1-032-63085-4: **$99.99**
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A First Course on Orthogonal Polynomials

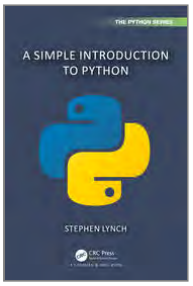
Classical Orthogonal Polynomials and Related Topics

Kenier Castillo , José Carlos Petronilho

This book provides an introduction to orthogonal polynomials and special functions aimed at graduate students studying these topics for the first time. A large part of its content is essentially inspired by the works of Pascal Maroni on the so-called algebraic theory of orthogonal polynomials, which distinguishes it from other contributions in the field.

Chapman & Hall
November 2024:240
Hb: 978-1-032-55597-3: **$120**
* For **full contents** and more information, visit: **www.routledge.com/9781032555973**

A Simple Introduction to Python



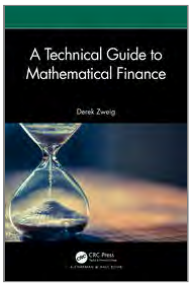
Stephen Lynch

Series: Chapman & Hall/CRC The Python Series

A Simple Introduction to Python is aimed at pre-university students and complete novices to programming. The whole book has been created using Jupyter notebooks. After introducing Python as a powerful calculator, simple programming constructs are covered and the NumPy, MatPlotLib and SymPy modules (libraries) are introduced. Python is then used for Mathematics, Cryptography, Artificial Intelligence, Data Science and Object Oriented Programming.The reader is shown how to program using the integrated development environments: Python IDLE, Spyder, Jupyter notebooks, and through cloud computing with Google Colab.

Chapman & Hall
June 2024:112
Pb: 978-1-032-75029-3: **$31.99**
Hb: 978-1-032-75167-2: **$100**
eBook: 978-1-003-47275-9
* For **full contents** and more information, visit: **www.routledge.com/9781032750293**

A Technical Guide to Mathematical Finance



Derek Zweig

A Technical Guide to Mathematical Finance covers those mathematical topics most important to an aspiring or professional quant. The text goes beyond a simple recitation of methods and aims to impart a genuine understanding of the fundamental concepts underpinning most of the techniques and tools routinely used by those working in quantitative finance.

Chapman & Hall
June 2024:198
Pb: 978-1-032-68723-0: **$68.99**
Hb: 978-1-032-68596-0: **$180**
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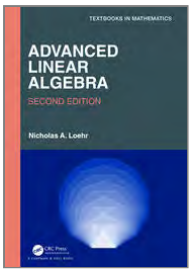
2ND EDITION

Advanced Linear Algebra



Nicholas A. Loehr Virginia Technical University, Blacksburg, USA

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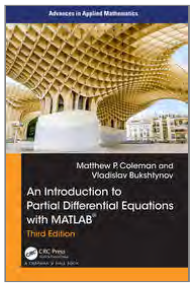
Designed for advanced undergraduate and beginning graduate students in linear or abstract algebra, Advanced Linear Algebra covers theoretical aspects of the subject, examples, computations, and proofs. It explores a variety of advanced topics in linear algebra that highlight the rich interconnections of the subject to geometry, algebra, analysis, combinatorics, numerical computation, and many other areas of mathematics. A wide array of topics is included, ranging from concrete matrix theory (basic matrix computations, determinants, normal matrices, canonical forms, matrix factorizations, and numerical algorithms) to more abstract linear algebra.

Chapman & Hall
June 2024:656
Hb: 978-1-032-76572-3: **$110**
eBook: 978-1-003-48456-1
* For **full contents** and more information, visit: **www.routledge.com/9781032765723**

3RD EDITION

An Introduction to Partial Differential Equations with MATLAB



Matthew P. Coleman Fairfield University, USA**, Vladislav Bukshtynov**

Series: Advances in Applied Mathematics

Suitable for a 1- or 2-semester intro to PDEs and Fourier series, the book offers equations based on method of solution and provides both physical and mathematical motivation. This 3rd edition changes the book structure by lifting the role of the computational part much closer to the revised analytical portion. Included is a substantial amount of material on reviewing computational methods for solving ODEs (symbolically and numerically), visualizing solutions of PDEs, using MATLAB's symbolic programming toolbox, and applying various numerical schemes for computing with regard to numerical solutions in practical applications, along with suggestions for topics of course projects.

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2ND EDITION

Artificial Intelligence

An Introduction to the Big Ideas and their Development

Robert H. Chen , Chelsea Chen

Series: Chapman & Hall/CRC Mathematics and Artificial Intelligence Series

This book guides readers through the history and development of AI, from its early mathematical beginnings through to the exciting possibilities of its potential future applications. To make this journey as accessible as possible, the authors build their narrative around accounts of some of the more popular and well-known demonstrations of artificial intelligence, including Deep Blue, AlphaGo and even Texas Hold'em, followed by their historical background, so that AI can be seen as a natural development of the mathematics and computer science of AI.

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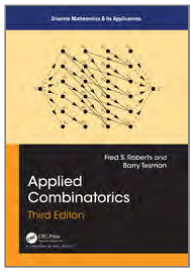
Applied Combinatorics



Fred Roberts Rutgers University, Piscataway, New Jersey, USA**, Barry Tesman** Dickinson College, Carlisle, Pennsylvania, USA

Series: Discrete Mathematics and Its Applications

The third edition of this popular text presents the tools of combinatorics for a first undergraduate course. After introducing fundamental counting rules, tools of graph theory and relations, the focus is on three basic problems of combinatorics: counting, existence, and optimization problems. They discuss advanced tools for dealing with the counting problem, including generating functions, recurrences, inclusion/exclusion, and Pólya theory. Combinatorial design, coding theory, and special problems in graph theory are also covered.

CRC Press
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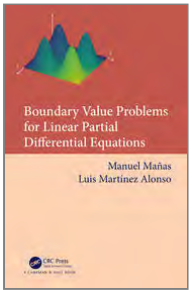
Boundary Value Problems for Linear Partial Differential Equations



Manuel Mañas Complutense University of Madrid, Spain**, Luis Martínez Alonso**

This book provides students with the opportunity to understand and exercise the benefits of Boundary value problems and initial value problems, equipping them with realistic, practical tools to study solvable linear models of electromagnetism, fluid dynamics, geophysics, optics, thermodynamics and specifically, quantum mechanics. Emphasis is devoted to motivating the use of these methods by means of concrete examples taken from physical models.

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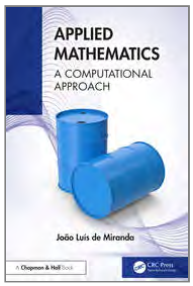
Applied Mathematics

A Computational Approach



João Luís de Miranda

This book aims to provide a basic and self-contained introduction to Applied Mathematics within a computational environment. The book is aimed at practitioners and researchers interested in modelling real world applications and verifying the results — guiding readers from the mathematical principles involved through to the completion of the practical, computational task.

Chapman & Hall
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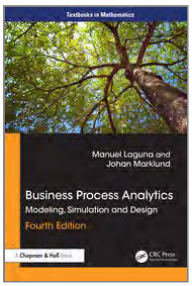
4TH EDITION

Business Process Analytics

Modeling, Simulation and Design



Manuel Laguna University of Colorado, Boulder, USA**, Johan Marklund** Lund University, Sweden

Series: Textbooks in Mathematics

BUSINESS PROCESS ANALYTICS Modeling, Simulation, and Design can be thought of as a hybrid between traditional books on process management, operations management, and simulation. § New Section on data-driven process improvement (with data visualization) § Added a subsection of control charts to the 6-sigma section § Replaced business process reengineering with business process management § Updated all text, figures and examples, and exercises to ExtendSim10 (current version) § More coverage on design of experiments § More coverage of machine learning and neural networks

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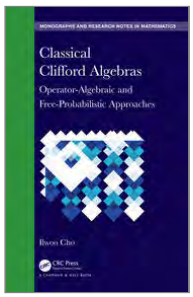
Classical Clifford Algebras

Operator-Algebraic and Free-Probabilistic Approaches



Ilwoo Cho Saint Ambrose University, Iowa

Series: Chapman & Hall/CRC Monographs and Research Notes in Mathematics

Classical Clifford Algebras: Operator-Algebraic and Free-Probabilistic Approaches offers novel insights through operator-algebraic and free-probabilistic models. By employing these innovative methods, the author sheds new light on the intrinsic connections between Clifford algebras and various mathematical domains. This monograph should be an essential addition to the library of any researchers interested in Clifford Algebras or Algebraic Geometry more widely.

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Derivatives Unlocked

A Practitioner's Perspective

Philippe Dufournier

This book offers the reader a practical explanation of the key concepts underpinning financial derivatives. Resolutely selective and user-friendly, this book constitutes an introduction to the basic pricing, design and use cases of derivatives products in modern global finance. The book is articulated around two parallel streams of content. On the one hand, the Derivatives Toolbox comes as a set of calculation and pricing rules behind the building blocks of most derivatives products. On the other hand, the Case Studies, largely inspired by real European corporate finance and risk management situations, allow the reader to make explicit use of the design and pricing principles learned.

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2ND EDITION

Computational Methods in Finance

Ali Hirsa Columbia University, New York, USA

Series: Chapman and Hall/CRC Financial Mathematics Series

Computational Methods in Finance is a book developed from the author's courses at Columbia University and the Courant Institute of New York University. This self-contained text is designed for graduate students in financial engineering and mathematical finance, as well as practitioners in the financial industry. It will help readers accurately price a vast array of derivatives.This new edition has been thoroughly revised throughout to bring it up to date with recent developments. It features numerous new exercises and examples, as well as two entirely new chapters on machine learning.

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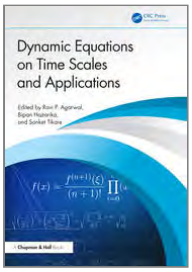
Dynamic Equations on Time Scales and Applications



Edited by **Ravi P Agarwal , Bipan Hazarika , Sanket Tikare**

This book presents the theory of dynamic equations on time scales and applications, providing an overview of recent developments in the foundations of the field as well as its applications. It discusses the recent results related to the qualitative properties of solutions like existence and uniqueness, stability, continuous dependence, controllability, oscillations, etc. • Presents cutting-edge research trends of dynamic equations and recent advances in contemporary research on the topic of time scales • Connects several new areas of dynamic equations on time scales with applications in different fields

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Decision Analysis through Modeling and Game Theory

William P. Fox

Series: Advances in Applied Mathematics

This unique book presents decision analysis in the context of mathematical modeling and game theory. The author emphasizes and focuses on the model formulation and modeling building skills required for decision analysis, as well as the technology to support the analysis. The primary objective of this book is illustrative in nature. It sets the tone through the introduction to mathematical modeling. The text provides a process for formally thinking about the problem and illustrates many scenarios and illustrative examples.

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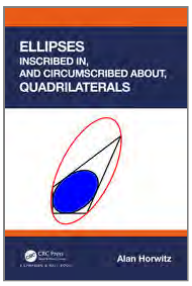
Ellipses Inscribed in, and Circumscribed about, Quadrilaterals



Alan Horwitz

The main focus is disseminating research results regarding the pencil of ellipses inscribing arbitrary convex quadrilaterals. In particular, the author proves that there is a unique ellipse of maximal area, EA, and a unique ellipse of minimal eccentricity, EI, inscribed in Q. Similar results are also proven for ellipses passing through the vertices of a convex quadrilateral along with some comparisons with inscribed ellipses. Special results are also given for parallelograms.

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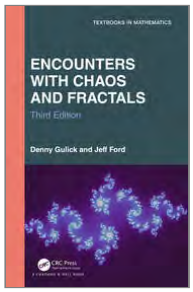
3RD EDITION

Encounters with Chaos and Fractals



Denny Gulick , Jeff Ford Gustavus Adolphus Collete

Series: Textbooks in Mathematics

Encounters with Chaos and Fractals, Third Edition provides an accessible introduction to chaotic dynamics and fractal geometry. It incorporates important mathematical concepts and backs up the definitions and results with motivation, examples, and applications. The Third Edition updates this classic book for a modern audience. New applications on contemporary topics, like data science and mathematical modelling, appear throughout. Coding activities are transitioned to open-source programming languages, including Python.

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Essential Mathematics for Economics

Alexis Akira Toda

Essential Mathematics for Economics covers mathematical topics that are essential for economic analysis in a concise but rigorous fashion. The book covers selected topics such as linear algebra, real analysis, convex analysis, constrained optimization, dynamic programming, and numerical analysis in a single volume. The book is entirely self-contained, and almost all propositions are proved.

Chapman & Hall
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Exploring Operations Research with R

Jim Duggan

Series: Chapman & Hall/CRC Series in Operations Research

This book shows how the R Programming language can be a valuable tool – and way of thinking – that can be successfully applied to the field of operations research (OR). The core aim of the book is to provide a self-contained introduction to R (both Base R and the tidyverse) and show how this knowledge can be applied to a range of OR challenges in the domains of public health, infectious diseases, and energy generation, and so provide a platform to develop actionable insights to support decision making.

Chapman & Hall
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Pb: 978-1-032-27716-5: **$82.99**
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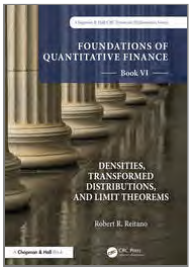
Foundations of Quantitative Finance, Book VI: Densities, Transformed Distributions, and Limit Theorems



Robert R. Reitano

Series: Chapman and Hall/CRC Financial Mathematics Series

Every finance professional wants and needs a competitive edge. A firm foundation in advanced mathematics can translate into dramatic advantages to professionals willing to obtain it. Many are not—and that is the competitive edge these books offer the astute reader. Features Extensively referenced to materials from earlier books Presents the theory needed to support advanced applications Supplements previous training in mathematics, with more detailed developments Built from the author's five decades of experience in industry, research, and teaching

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Fractional Calculus for Skeptics I

The Fractal Paradigm

Bruce J. West North Carolina State University, USA; Center for Nonlinear Science, UNT, Denton, TX, USA**, YangQuan Chen** University of California Merced, USA

Series: Fractional Order Thinking in Exploring the Frontiers of STEM

This book is the first of its kind on fractional calculus (FC), dedicated to advocating for FC in STEM education and research. The book will appeal to students and researchers in all STEM-related fields, engineering, physics, biology and biomedicine, climate change, big data, machine learning, etc. It is also suitable for general readers interested in these fields.

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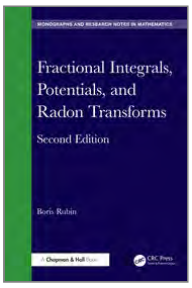
2ND EDITION

Fractional Integrals, Potentials, and Radon Transforms



Boris Rubin Louisiana State University, United States of America

Series: Chapman & Hall/CRC Monographs and Research Notes in Mathematics

This book presents recent developments in the fractional calculus of functions of one and several real variables, and shows the relation of this field to a variety of areas in pure and applied mathematics. In this thoroughly revised new edition, the book aims to explore how fractional integrals occur in the study of diverse Radon type transforms in integral geometry. Beyond some basic properties of fractional integrals in one and many dimensions, this book also contains a mathematical theory of certain important weakly singular integral equations of the first kind arising in mechanics, diffraction theory and other areas of mathematical physics.

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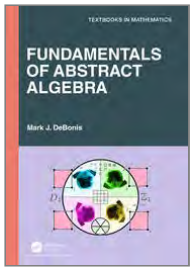
Fundamentals of Abstract Algebra



Mark J. DeBonis Manhattan College, USA

Series: Textbooks in Mathematics

This is a primary textbook for a one year first course in Abstract Algebra, but it has much more to offer besides this. The book is full of opportunities for further, deeper reading, including explorations of interesting applications and more advanced topics, such as Galois theory. Replete with exercises and examples, the book is geared towards careful pedagogy and accessibility, and requires only minimal prerequisites. The book includes a primer on some basic mathematical concepts that will be useful for readers to understand, and in this sense the book is self-contained.

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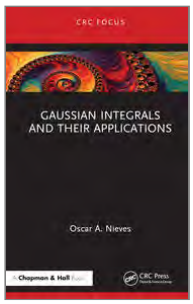
Gaussian Integrals and their Applications



Oscar A. Nieves

In this book, the author has condensed the material deemed essential for undergraduate and graduate students of physics and mathematics, such that for those who are very keen would know what to look for next if their appetite for knowledge remains unsatisfied by the time they finish reading this book.

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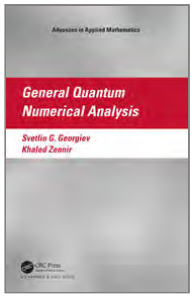

Svetlin G. Georgiev , Khaled Zennir Qassim University

Series: Advances in Applied Mathematics

This book is focused on the qualitative theory of general quantum calculus, the modern name for the investigation of calculus without limits. It centers on designing, analysing and applying computational techniques for general quantum differential equations. The quantum calculus or q-calculus began with FH Jackson in the early twentieth century, but this kind of calculus had already been worked out by Euler and Jacobi. Recently it arose interest due to high demand of mathematics that models quantum computing and in the connection between mathematics and physics.

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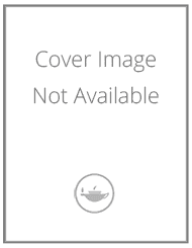
Geometry and Topology in Music



Edited by **Moreno Andreatta , Emmanuel Amiot , Jason Yust**

This book introduces path-breaking applications of concepts from mathematical topology to music-theory topics including harmony, chord progressions, rhythm, and music classification. Contributions address topics of voice leading, Tonnetze (maps of notes and chords), and automatic music classification. It further introduces an application of topology to automatic music classification, drawing upon both static topological representations and time-series evolution, showing how static and dynamic features of music interact as features of musical style. It was originally published as a special issue of the Journal of Mathematics and Music.

CRC Press
November 2024:124
Hb: 978-1-032-84515-9: **$180**
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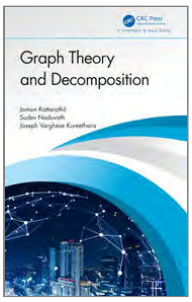
Graph Theory and Decomposition



Jomon Kottarathil Savio H.S.S. Devagiri**, Sudev Naduvath** Christ Deemed to be University**, Joseph Varghese Kureethara** Christ Deemed to be University

The book Graph Theory and Decomposition covers major areas of the decomposition of graphs. It is a three-part reference book with nine chapters that is aimed at enthusiasts as well as research scholars. It comprehends historical evolution and basic terminologies. It deliberates on decompositions into cyclic graphs, such as cycle, digraph, and K4-e decompositions.

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Handbook of Exact Solutions to Mathematical Equations

Andrei D. Polyanin

Series: Advances in Applied Mathematics

This Handbook is a unique reference for scientists and engineers, containing over 3,800 nonlinear partial differential equations withsolutions.The book concerns first-, second-, third-, fourth-, and higher-order nonlinear PDEs and systems of coupled PDEs.It discusses parabolic, hyperbolic, and elliptic equations as well as those of mixed and general type. Apart from the exact solutions, it also provides various reductions and transformations leading to ordinary differential equations, linear PDEs, or simpler PDEs.

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2ND EDITION

Handbook of Military and Defense Operations Research

Edited by **Natalie M. Scala** Towson University, USA**, James P. Howard, II** Johns Hopkins Applied Physics Laboratory, USA

Series: Chapman & Hall/CRC Series in Operations Research

Tracing its roots back to World War II, Operations Research (OR) has become a vital tool in military and defense strategy. The second edition of this book highlights this evolution, showcasing how OR integrates with cutting-edge areas like artificial intelligence, cybersecurity, and big data analytics. This edition is more than a historical account; it is a practical guide. The volume features expert voices and offers insights into OR applications in modern security challenges. Dive into this handbook to explore the rich, dynamic field of military and defense operations research, a discipline at the heart of global security and strategic decision-making.

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I-Function and its Applications

Vinod Prakash Saxena Gwalior Academy of Mathematical Sciences, India**, Praveen Agarwal** Anand International Clg. of Engg, India**, Altaf Ahmad Bhat**

Series: Mathematical Modeling and Computational Methods for Innovation

This book presents the essential role of Mathematical Modeling and Computational Methods in representing physical phenomena mathematically, focusing on the significance of the I-function. Serving as a generalized form of special functions, particularly generalised hypergeometric functions, the I-function emerges from solving dual integral equations, prevalent in scenarios like mixed boundary problems in potential theory, energy diffusion, and population dynamics.

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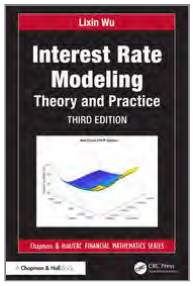
3RD EDITION

Interest Rate Modeling

Theory and Practice



Lixin Wu

Series: Chapman and Hall/CRC Financial Mathematics Series

Containing many results that are new, or which exist only in recent research articles, this thoroughly revised third edition of Interest Rate Modeling: Theory and Practice, Third Edition portrays the theory of interest rate modeling as a three-dimensional object of finance, mathematics, and computation. It introduces all models with financial-economical justifications, develops options along the martingale approach, and handles option evaluations with precise numerical methods.

Chapman & Hall
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2ND EDITION

Introducing Game Theory and its Applications

Elliott Mendelson , Daniel Zwillinger

Series: Advances in Applied Mathematics

Introducing Game Theory and its Applications presents an easy-to-read introduction to the basic ideas and techniques of game theory. After a brief introduction, the authors begin with a chapter devoted to combinatorial games--a topic neglected or treated minimally in most other texts. The focus then shifts to two-person zero-sum games and their solution.

Chapman & Hall
August 2024:287
Pb: 978-1-032-81180-2: **$79.95**
Hb: 978-0-367-50791-6: **$200**
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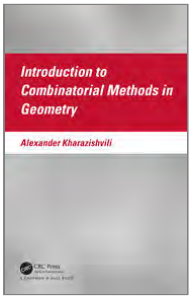
Introduction to Combinatorial Methods in Geometry



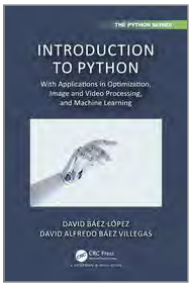
Alexander Kharazishvili

This book offers an introduction to some combinatorial (also, set-theoretical) approaches and methods in geometry of the Euclidean space Rm. The topics discussed in the manuscript are due to the field of combinatorial and convex geometry. The material presented is based on the lecture course given by the author. The choice of material serves to demonstrate the unity of mathematics and variety of unexpected interrelations between distinct mathematical branches.

Chapman & Hall
May 2024:396
Hb: 978-1-032-59470-5: **$150**
eBook: 978-1-003-45870-8
* For **full contents** and more information, visit: **www.routledge.com/9781032594705**

Introduction to Python

With Applications in Optimization, Image and Video Processing, and Machine Learning



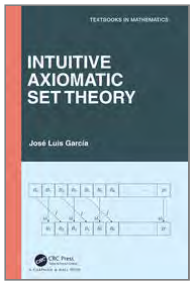
David Báez-López , David Alfredo Báez Villegas

Series: Chapman & Hall/CRC The Python Series

The book is written to be accessible and useful to those with no prior experience of Python, but those who are somewhat more adept will also benefit from the more advanced material that comes later in the book. This book is written in such a way that it can also serve as a self-contained handbook for professionals working in quantitative fields including finance, IT, and many other industries where programming is a useful or essential tool.

Chapman & Hall
July 2024:452
Pb: 978-1-032-11910-6: **$77.99**
Hb: 978-1-032-11767-6: **$230**
eBook: 978-1-003-22211-8
* For **full contents** and more information, visit: **www.routledge.com/9781032119106**

Intuitive Axiomatic Set Theory



José L Garciá

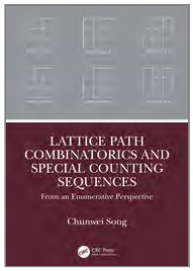
Series: Textbooks in Mathematics

Set theory can be rigorously and profitably studied through an intuitive approach, thus independently of formal logic. Nearly every branch of Mathematics depends upon set theory and thus knowledge of set theory is of interest to every mathematician. This book is addressed to all mathematicians and tries to convince them that this intuitive approach to axiomatic set theory is not only possible, but also valuable.

Chapman & Hall
April 2024:362
Hb: 978-1-032-58120-0: **$100**
eBook: 978-1-003-44991-1
* For **full contents** and more information, visit: **www.routledge.com/9781032581200**

Lattice Path Combinatorics and Special Counting Sequences

From an Enumerative Perspective

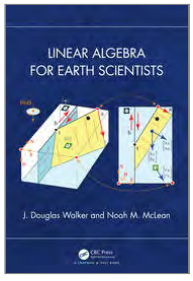


Chunwei Song

This book endeavors to deepen our understanding of lattice path combinatorics, to explore key types of special sequences, to elucidate their interrelations, and at the same time to advocate the author's interpretation of the "combinatorial spirit". It intends to give an up-to-date introduction to the theory of lattice path combinatorics, its relation to those special counting sequences that are important in modern combinatorial studies, such as the Catalan, Schröder, Motzkin, Delannoy numbers, and their generalized versions.The book will attract to graduate students and advanced undergraduates studying combinatorics, discrete mathematics, or computer science.

CRC Press
September 2024:120
Hb: 978-1-032-67175-8: **$79.99**
* For **full contents** and more information, visit: **www.routledge.com/9781032671758**

Linear Algebra for Earth Scientists



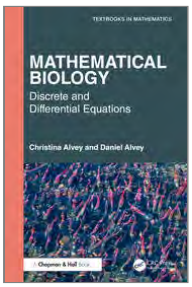
J. Douglas Walker , Noah M. McLean

This book is written for undergraduate and graduate students in Earth and Environmental sciences. It is intended to give students enough background in linear algebra to work with systems of equations and data in geology, hydrology, geophysics, or whatever part of the Earth Sciences they engage with. The book does not presuppose any extensive prior knowledge of linear algebra. Instead, the book builds students up from a low base to a working understanding of the subject that they can apply to their work, using many familiar examples in the geosciences.

Chapman & Hall
April 2024:320
Hb: 978-1-032-55594-2: **$120**
eBook: 978-1-003-43204-3
* For **full contents** and more information, visit: **www.routledge.com/9781032555942**

Mathematical Biology

Discrete and Differential Equations



Christina Alvey , Daniel Alvey

Series: Textbooks in Mathematics

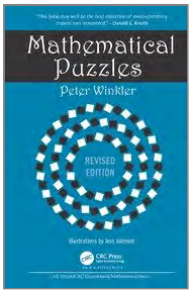
This text serves as an exploration of the beautiful topic of mathematical biology through the lens of discrete and differential equations. Intended for students who have completed differential and integral calculus, this book allows students to explore topics such as bifurcation diagrams, nullclines, discrete dynamics, and SIR models for disease spread, which are often reserved for more advanced undergraduate or graduate courses. These exciting topics are sprinkled throughout the text alongside the more typical first and second order linear differential equations and systems of linear differential equations.

Chapman & Hall
August 2024:400
Hb: 978-1-032-28825-3: **$99.95**
* For **full contents** and more information, visit: **www.routledge.com/9781032288253**

2ND EDITION

Mathematical Puzzles

Revised Edition



Peter Winkler Dartmouth College, USA

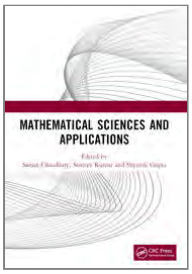
Series: AK Peters/CRC Recreational Mathematics Series

Research in maths is much more than solving puzzles, but most people will agree that solving puzzles is not just fun: it helps focus the mind and increases one's armory of techniques for doing maths. This book makes this connection explicit by isolating important mathematical methods, then using them to solve puzzles and prove a theorem. This Revised Edition has been thoroughly edited to correct errors and provide clarifications, and includes some totally different solutions, modified puzzles, and one entirely new puzzle.

A K Peters/CRC Press
June 2024:518
Pb: 978-1-032-70848-5: **$33.99**
Hb: 978-1-032-70953-6: **$79.99**
eBook: 978-1-032-70965-9
* For **full contents** and more information, visit: **www.routledge.com/9781032708485**

Mathematical Sciences and Applications

Proceedings of the International Conference on Mathematical Sciences and Applications (ICMSA 2023)



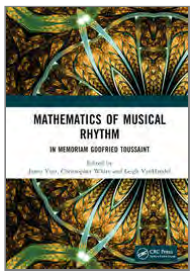
Edited by **Sanjay Chaudhary , Sanjeev Kumar , Shyamli Gupta**

The papers appearing in these proceedings are part of talks, oral presentations and poster presentations given at the International Conference on Mathematical Sciences and Applications held in the Department of Mathematics, Dr. Bhimrao Ambedkar University, Agra (India) from March 24-26, 2023. The Conference was held under the auspices of the Mathematics Department which is recognized and founded by the U.P. State Govt. as a Centre of Excellence in Mathematics.

CRC Press
April 2024:290
Pb: 978-1-032-58861-2: **$54.99**
* For **full contents** and more information, visit: **www.routledge.com/9781032588612**

Mathematics of Musical Rhythm

In Memoriam Godfried Toussaint



Edited by **Jason Yust , Christopher White , Leigh VanHandel** Michigan State University, USA

This book presents original research applying mathematics to musical rhythm, with a focus on computational methods, theoretical approaches, analysis of rhythm in folk and global music traditions, syncopation, and maximal evenness. It honours the legacy of computer scientist and music theorist Godfried Toussaint.The volume also includes an original composition by Tom Johnson and a personal recollection of Toussaint by Francisco Gómez-Martín. It was originally published as a special issue of the Journal of Mathematics and Music.

Routledge
September 2024:130
Hb: 978-1-032-81849-8: **$180**
* For **full contents** and more information, visit: **www.routledge.com/9781032818498**

Mathematics of Tabletop Games

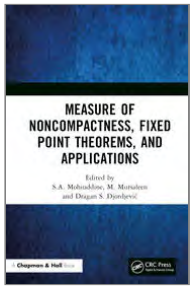
Aaron Montgomery

Series: AK Peters/CRC Recreational Mathematics Series

This book provides a bridge between mathematics and hobby tabletop gaming. Instead of focusing on games mathematicians play, such as nim and chomp, this book starts with the tabletop games played by avid gamers and hopes to address the question: which field of mathematics concerns itself with this situation? Readers interested in either mathematics or tabletop games will find this book an engaging way to begin exploring the other topic or the connection between the topics.

A K Peters/CRC Press
July 2024:208
Pb: 978-1-032-46852-5: **$31.99**
Hb: 978-1-032-46851-8: **$99.95**
eBook: 978-1-003-38352-9
* For **full contents** and more information, visit: **www.routledge.com/9781032468525**

Measure of Noncompactness, Fixed Point Theorems, and Applications

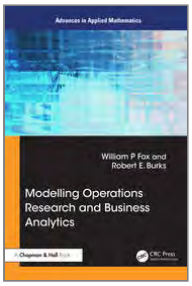


Edited by **S. A. Mohiuddine , M. Mursaleen , Dragan S. Djordjević**

This edited volume presents recent research in the theory of the measure of noncompactness and its applications in pure and applied mathematics. Discusses topics such as measures of noncompactness in the space of regulated functions, application in nonlinear infinite systems of fractional differential equations, coupled fixed point theorem, etc. For academic researchers in mathematics.

Chapman & Hall
April 2024:204
Hb: 978-1-032-56009-0: **$160**
eBook: 978-1-003-43657-7
* For **full contents** and more information, visit: **www.routledge.com/9781032560090**

Modelling Operations Research and Business Analytics



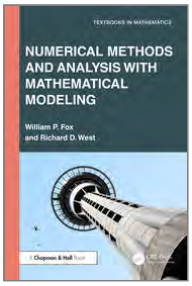
William P Fox , Robert E. Burks

Series: Advances in Applied Mathematics

This book provides sample exercises, techniques, and solutions to employ mathematical modeling to solve problems in Operations Research and Business Analytics. Each chapter begins with a scenario and includes exercises built on realistic problems faced by managers and others working in operations research, business analytics, and other fields employing applied mathematics. A set of assumptions is presented and then a model is formulated. A solution is offered followed by examples of how that model can be used to address related issues.

Chapman & Hall
August 2024:184
Pb: 978-1-032-73592-4: **$59.95**
Hb: 978-1-032-71755-5: **$150**
* For **full contents** and more information, visit: **www.routledge.com/9781032735924**

Numerical Methods and Analysis with Mathematical Modelling



William P. Fox U.S. Naval Post Graduate School**, Richard D. West**

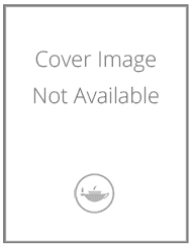
Series: Textbooks in Mathematics

What sets this book apart is the modeling aspects utilizing numerical analysis (methods) to obtain solutions. The authors cover the basic numerical analysis methods first with simple examples to illustrate the techniques and discuss possible errors. The modeling prospective reveals the practical relevance of the numerical methods in context to real world problems. At the core of this text are the real-world modeling projects. Chapters are introduced and techniques are discussed with common examples. A modeling scenario is introduced that will be solved with these techniques later in the chapter.

Chapman & Hall
August 2024:368
Pb: 978-1-032-70368-8: **$89.95**
Hb: 978-1-032-69723-9: **$230**
* For **full contents** and more information, visit: **www.routledge.com/9781032703688**

Numerical Methods for Scientists and Engineers

With Pseudocodes



Zekeriya Altaç

Series: Chapman & Hall/CRC Numerical Analysis and Scientific Computing Series

This book is designed as a primary textbook for a one-semester course on Numerical Methods for sophomore or junior-level students. It covers the fundamental numerical methods required for scientists and engineers, as well as some advanced topics which are left to the discretion of instructors. The objective of the text is to provide readers with a strong theoretical background on numerical methods encountered in science and engineering, and to explain how to apply these methods to practical, real-world problems. Readers will also learn how to convert numerical algorithms into running computer codes.

Chapman & Hall
October 2024:784
Hb: 978-1-032-75474-1: **$120**
* For **full contents** and more information, visit: **www.routledge.com/9781032754741**

On the Fractal Language of Medicine

Bruce J. West North Carolina State University, USA; Center for Nonlinear Science, UNT, Denton, TX, USA**, W. Alan C. Mutch**

Series: Fractional Order Thinking in Exploring the Frontiers of STEM

On the Fractal Language of Medicine bridges a very clear gap between the knowledge gained over the last 20 years in the physical and life sciences about network theory, organ synchronicity and communication, the understanding of fractal signatures in health and disease, and the importance of fractional calculus in integrating these concepts. This book will be of great interest to medical students, professionals and academics, as well as students and researchers of applied mathematics, especially those interested in fractional calculus and fractals.

CRC Press
July 2024:161
Hb: 978-1-032-79965-0: **$230**
* For **full contents** and more information, visit: **www.routledge.com/9781032799650**

Optimization

100 Examples

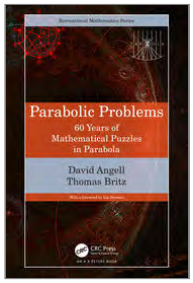
Simon Serovajsky Al-Farabi Kazakh National University, Department of Differential Equations and Control Theory, Almaty, Kazakhstan

This book is devoted to the analysis of scenarios for which the use of well-known optimization methods encounter certain difficulties. Analysing such examples allows a deeper understanding of the features of these optimization methods, including the limits of their applicability. In this way, the book seeks to stimulate further development and understanding of the theory of optimal control. The study of the presented examples makes it possible to more effectively diagnose problems that arise in the practical solution of optimal control problems, and to find ways to overcome the difficulties that have arisen.

Chapman & Hall
July 2024:556
Hb: 978-1-032-50007-2: **$230**
eBook: 978-1-003-39858-5
* For **full contents** and more information, visit: **www.routledge.com/9781032500072**

Parabolic Problems

60 Years of Mathematical Puzzles in Parabola



David Angell Univeristy of New South Wales, Australia**, Thomas Britz** University of New SouthWales, Australia

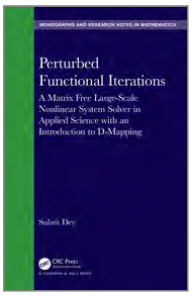
Series: AK Peters/CRC Recreational Mathematics Series

Parabola is a mathematics magazine published by the UNSW, Sydney. This book collects the very best of the almost 1800 problems and puzzles from Parabola magazine into a single volume. Many of the problems have been re-mastered, and new illustrations have been added. Topics covered range across geometry, number theory, combinatorics, logic, and algebra. Solutions are provided to all problems, and a chapter has been included detailing some frequently useful problem-solving techniques, making this a fabulous resource for education and, most importantly, fun!

A K Peters/CRC Press
June 2024:296
Pb: 978-1-032-48319-1: **$36.99**
Hb: 978-1-032-49998-7: **$115**
eBook: 978-1-003-39641-3
* For **full contents** and more information, visit: **www.routledge.com/9781032483191**

Perturbed Functional Iterations

A Matrix Free Large-Scale Nonlinear System Solver in Applied Science with an Introduction to D-Mapping



Suhrit Dey Eastern Illinois University Charleston, United States of America

Series: Chapman & Hall/CRC Monographs and Research Notes in Mathematics

Perturbed Functional Iterations is a large-scale nonlinear system solver. Nature is abundant with events simulated mathematically by nonlinear systems of equations and inequalities. These we call nonlinear models. Often, they are ill conditioned, meaning small changes in data causing huge changes in the output. PFI, which was earlier called PIS (Perturbed Iterative Scheme) is a numerical method to solve nonlinear systems of equations in multidimensional space. This book will guide readers with the proper use of PFI, both in theoretical and practical settings.

Chapman & Hall
June 2024:326
Hb: 978-1-032-35029-5: **$200**
eBook: 978-1-003-32592-5
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Playing with Infinity

Turtles, Patterns, and Pictures

Hans Zantema

Series: AK Peters/CRC Recreational Mathematics Series

This is a book about infinity — specifically the infinity of numbers, and how one kind of infinity is greater than all the rest. Along the way the author will demonstrate how infinity can be made to create beautiful 'art', and how this process can help us to understand the fundamental nature of numbers. This book will provide a fascinating read for anyone interested in number theory, infinity, math art, and/or generative art, and could be used a valuable supplement to any course on these topics.

A K Peters/CRC Press
April 2024:234
Pb: 978-1-032-70610-8: **$39.95**
Hb: 978-1-032-73800-0: **$100**
eBook: 978-1-003-46600-0
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Puzzle and Proof

A Decade of Problems from the Utah Math Olympiad

Samuel Dittmer , Hiram Golze , Grant Molnar , Caleb Stanford University of California, Davis, United States of America

Series: AK Peters/CRC Recreational Mathematics Series

This book is a compilation of the problems and solutions for the first ten years of the Utah Math Olympiad. The problems are challenging but should be understandable at a high school level. Besides putting all problems in one place (70 in total), which have not previously appeared in print, the book provides additional inspiration for many of the problems and will contain the first published solutions for 10 problems that were originally published on the contest flyer. The book will be a fantastic resource for anyone who enjoys mathematical and/or logic puzzles or is interested in studying for mathematics competitions.

A K Peters/CRC Press
August 2024:134
Pb: 978-1-032-75552-6: **$39.99**
Hb: 978-1-032-76263-0: **$120**
eBook: 978-1-003-47776-1
* For **full contents** and more information, visit: **www.routledge.com/9781032755526**

Quantitative Literacy Through Games and Gambling

Mark Hunacek

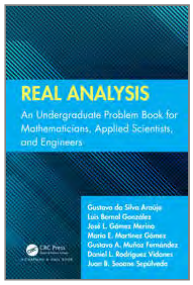
Series: Textbooks in Mathematics

This book was developed to address a need. Quantitative Literacy courses have been established in the mathematics curriculum for decades now. This book is a text for such a course; focused on a single idea that most students seem to already have some interest in and is written at an accessible level. Covers the basic ideas of discrete probability and shows how these ideas can be applied to familiar games (roulette, poker, blackjack, etc.) The gambling material is interweaved through the book, introduced as soon as the necessary mathematics has been developed. Throughout, mathematical formalism and symbolism have been avoided, and numerous examples are provided.

Chapman & Hall
October 2024:138
Pb: 978-1-032-63392-3: **$54.99**
Hb: 978-1-032-65915-2: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032633923**

Real Analysis

An Undergraduate Problem Book for Mathematicians, Applied Scientists, and Engineers



Gustavo Da Silva Araújo UEP, Brazil**, Luis Bernal González** US, Spain**, José L. Gámez Merino** UCM, Spain**, María E. Martínez Gómez , Gustavo A. Muñoz Fernández** UCM, Spain**, Daniel L. Rodríguez Vidanes** UCM, Spain**, Juan B. Seoane Sepúlveda** UCM, Spain

This is a classical Real Analysis/Calculus problem book. This volume contains a huge number of engaging problems and solutions, as well as detailed explanations of how to achieve these solutions. This latter quality is something that many problem books lack, and it is hoped that this feature will be useful to students and instructors alike.

Chapman & Hall
June 2024:536
Pb: 978-1-032-51026-2: **$71.99**
Hb: 978-1-032-50461-2: **$190**
eBook: 978-1-003-40074-5
* For **full contents** and more information, visit: **www.routledge.com/9781032510262**

Regularity Techniques for Elliptic PDEs and the Fractional Laplacian

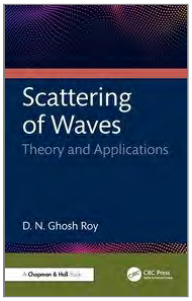
Pablo Raúl Stinga Iowa State University, United States of America

This book presents important analytic and geometric techniques to prove regularity estimates for solutions to second order elliptic equations, both in divergence and nondivergence form, and to nonlocal equations driven by the fractional Laplacian. The emphasis is placed on ideas and the development of intuition, while at the same time being completely rigorous. The reader should keep in mind that this text is about how analysis can be applied to regularity estimates. Many methods are nonlinear in nature, but the focus is on linear equations without lower order terms, thus avoiding bulky computations.

Chapman & Hall
June 2024:334
Hb: 978-1-032-67944-0: **$160**
eBook: 978-1-032-67985-3
* For **full contents** and more information, visit: **www.routledge.com/9781032679440**

Scattering of Waves

Theory and Applications

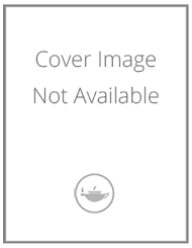


D. N. Ghosh Roy (816)Utah Center For Advanced Imaging Research (UCAIR), Salt Lake City, USA

Scattering of Waves: Theory and Applications explores the underlying concepts, physics and mathematics of wave scattering and wave field structures and self-consistently introduces a range of topics in scalar acoustics and quantum and vector electromagnetic scattering. Primarily aimed at advanced students of physics, engineering and applied mathematics, this text will also be valuable to researchers and faculties in electromagnetics, acoustics and quantum mechanics.

Chapman & Hall
September 2024:488
Hb: 978-1-498-72901-7: **$170**
* For **full contents** and more information, visit: **www.routledge.com/9781498729017**

Separate and Joint Continuity



Jiling Cao Auckland University of Technology, New Zealand**, Warren B. Moors** The University of Auckland, New Zealand

Series: Chapman & Hall/CRC Monographs and Research Notes in Mathematics

Separate and Joint Continuity presents and summarises the main ideas and theorems that have been developed on this topic, which lies at the interface between General Topology and Functional Analysis (and the geometry of Banach spaces in particular). The book offers detailed, self-contained proofs of many of the key results. Although the development of this area has now slowed to a point where an authoritative book can be written, many important and significant problems remain open, and it is hoped that this book may serve as a springboard for future and emerging researchers into this area.

Chapman & Hall
July 2024:170
Hb: 978-1-032-75476-5: **$200**
eBook: 978-1-003-47775-4
* For **full contents** and more information, visit: **www.routledge.com/9781032754765**

Stochastic Methods in Scientific Computing

From Foundations to Advanced Techniques

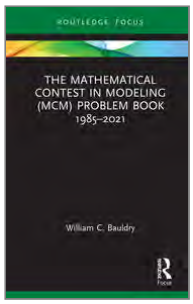
Massimo D'Elia University of Pisa, Italy**, Kurt Langfeld** Plymouth University, UK**, Biagio Lucini** Swansea University, UK

Series: Chapman & Hall/CRC Numerical Analysis and Scientific Computing Series

This book introduces the reader to advanced concepts in stochastic modelling, rooted in an intuitive yet rigorous presentation of the underlying mathematical concepts. A particular emphasis is placed on illuminating the underpinning Mathematics, and yet have the practical applications in mind. The reader will find valuable insights into topics ranging from Social Sciences and Particle Physics to modern-day Computer Science with Machine Learning and AI in focus. The book also covers recent specialised techniques for notorious issues in the field of stochastic simulations, providing a valuable reference for advanced readers with an active interest in the field.

Chapman & Hall
June 2024:400
Hb: 978-1-498-79633-0: **$120**
eBook: 978-1-315-15615-6
* For **full contents** and more information, visit: **www.routledge.com/9781498796330**

The Mathematical Contest in Modeling (MCM) Problem Book 1985–2021

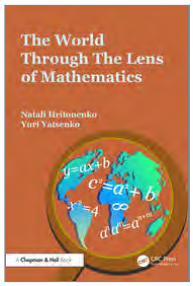


William C. Bauldry

The Mathematical Contest in Modeling, or MCM, sponsored by COMAP, is an international competition for undergraduates that began in 1985. Over the past 35 years, the contest has grown from under 100 entries to over 10,000 teams per year. This book offers the best and most notable problems from the competition. A complete listing of MCM problems with links to results, student papers, and judge's commentaries can be found at COMAP's previous-contests webpage.

A K Peters/CRC Press
July 2024:142
Hb: 978-1-032-28945-8: **$61.99**
* For **full contents** and more information, visit: **www.routledge.com/9781032289458**

The World through the Lens of Mathematics

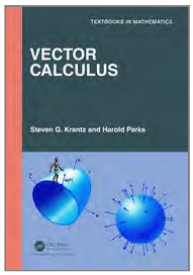


Natali Hritonenko , Yuri Yatsenko

Following up on their previous book, U.S.A. Through the Lens of Mathematics, the authors offer interesting information about all countries in the world, their history,geography, language, culture, and resources presented in the form of mathematical problems. This unique book aims to shatter the barrier between students and this mathematics by encouraging students to look at mathematics from a different perspective, build a bridge between their surroundings and mathematics and, at the same time, enriches them with new knowledge of culture, history, customs, and geography.

Chapman & Hall
September 2024:256
Pb: 978-1-032-39859-4: **$26.95**
Hb: 978-1-032-39861-7: **$77.99**
* For **full contents** and more information, visit: **www.routledge.com/9781032398594**

Vector Calculus



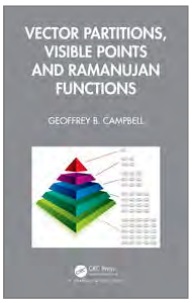
Steven G. Krantz Washington University, St. Louis, Missouri, USA**, Harold Parks**

Series: Textbooks in Mathematics

A calculus book must tell the truth.This book is carefully written in the accepted language of mathematics in a readable exposition. It includes useful and fascinating applications, acquaints students with the history of the subject and offers a sense of what mathematics is all about. Technique is presented, yet so are ideas. The author helps students to master basic methods and how to discover and build their own concepts in a scientific subject. There is an emphasis on using modeling and numerical calculation.

Chapman & Hall
May 2024:681
Hb: 978-1-032-30266-9: **$140**
eBook: 978-1-003-30424-1
* For **full contents** and more information, visit: **www.routledge.com/9781032302669**

Vector Partitions, Visible Points and Ramanujan Functions

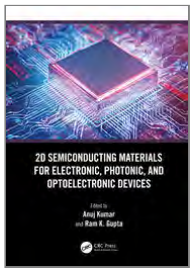


Geoffrey B. Campbell

This book offers a novel theory of Vector Partitions, though very much grounded in the long-established work of others, that could be developed as an extension to the existing theory of Integer Partitions. The book is suitable for graduate students in physics, applied mathematics, number theory and computational mathematics. It takes the reader up to research level, presenting new results alongside known classical results from integer partitions and areas of vector and multipartite partition theory. It also sets forth new directions for research for the more advanced reader.

Chapman & Hall
May 2024:564
Hb: 978-1-032-00366-5: **$200**
eBook: 978-1-003-17415-8
* For **full contents** and more information, visit: **www.routledge.com/9781032003665**

2D Semiconducting Materials for Electronic, Photonic, and Optoelectronic Devices



Edited by **Anuj Kumar , Ram K. Gupta** Pittsburg State University

Two-dimensional semiconducting materials (2D-SCMs) are the subject of intensive study in the fields of photonics and optoelectronics because of their unusual optical, electrical, thermal, and mechanical properties. The main objective of 2D Semiconducting Materials for Electronic, Photonic, and Optoelectronic Devices is to provide current, state-of-the-art knowledge of two-dimensional semiconducting materials for various applications. Two-dimensional semiconducting materials are the basic building blocks for making photodiodes, light-emitting diodes, light-detecting devices, data storage, telecommunications, and energy-storage devices.

CRC Press
September 2024:400
Hb: 978-1-032-57352-6: **$230**
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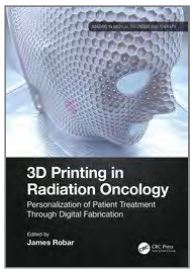
3D Printing in Radiation Oncology

Personalization of Patient Treatment Through Digital Fabrication



Edited by **James Robar** Dalhousie University

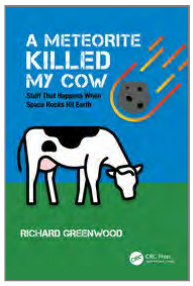
Series: Imaging in Medical Diagnosis and Therapy

3D printing in Radiation Therapy: A Handbook presents a comprehensive, practical view of the forms in which 3D printing is being integrated into radiation oncology practice. Radiation oncology employs among the most sophisticated digital technologies in medicine. 3D printing is offering enhancements in precision and efficiency through the design and fabrication of patient photon and electron bolus, customized surface and gynecological brachytherapy applicators, proton beam compensators and range shifters, patient immobilization, novel radiation detectors and phantoms.

CRC Press
June 2024:254
Hb: 978-1-032-26195-9: **$180**
eBook: 978-1-003-28840-4
* For **full contents** and more information, visit: **www.routledge.com/9781032261959**

A Meteorite Killed My Cow

Stuff That Happens When Space Rocks Hit Earth



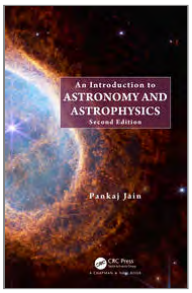
Richard Greenwood

This book introduces the reader to the fascinating and sometimes bizarre world of space rocks using a simple, clear layman-friendly style. It explains why they are so special and describes their main characteristics. The non-technical approach used throughout the book make it particularly accessible to the general public and it will be of interest to anyone looking to learn more about these cosmic visitors and the wealth of scientific information they contain.

CRC Press
May 2024:250
Pb: 978-0-367-77448-6: **$31.99**
Hb: 978-1-032-00605-5: **$140**
eBook: 978-1-003-17486-8
* For **full contents** and more information, visit: **www.routledge.com/9780367774486**

2ND EDITION

An Introduction to Astronomy and Astrophysics



Pankaj Jain

This book offers a comprehensive introduction to astronomy and astrophysics, complete with illustrative examples and illuminating homework problems. Requiring a familiarity with basic physics and mathematics, this undergraduate-level textbook teaches students how to interpret the night sky, providing them with a critical understanding of the stars and sun, solar system, extrasolar planets, stars, and galaxies.

Chapman & Hall
April 2024:382
Hb: 978-0-367-25758-3: **$120**
eBook: 978-1-003-47047-2
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Applications of Accelerators in the Quantum Technology Era

Edited by **David Jamieson , Andrew Anthony Bettiol , Andre Schleife**

This book explores new experimental techniques and theoretical models to deepen an understanding of radiation effects and ion interaction processes in order to design materials for devices for the emerging quantum technology era. Applications include tailored sensors that respond to ionizing radiation and other electromagnetic phenomena; sensors with high radiation hardness; and materials that contain specific engineered defects with desirable optical, magnetic or electrical properties.

CRC Press
November 2024:192
Hb: 978-1-032-31058-9: **$130**
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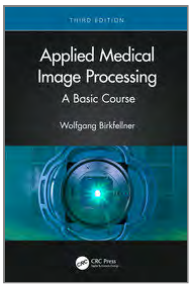
3RD EDITION

Applied Medical Image Processing

A Basic Course



Wolfgang Birkfellner Medical University of Vienna, Austria

A widely used, classroom-tested text, Applied Medical Image Processing: A Basic Course delivers an ideal introduction to image processing in medicine, emphasizing the clinical relevance and special requirements of the field. Avoiding excessive mathematical formalisms, the book presents key principles by implementing algorithms from scratch and using simple MATLAB®/Octave scripts with image data and illustrations on an accompanying companion website

CRC Press
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Hb: 978-1-032-12767-5: **$96.99**
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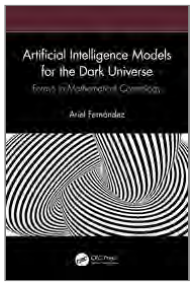
Artificial Intelligence Models for the Dark Universe

Forays in Mathematical Cosmology



Ariel Fernández

Artificial Intelligence (AI) is a valuable tool in this effort since it can reconcile conflicting data from deep space with the extant laws of physics by building models to decipher the dark universe. This book explores the applications of AI and how it can be used to embark on a metaphysical quest to identify the topology of the universe as a prerequisite to implementing a physical model of the dark universe.

CRC Press
August 2024:242
Pb: 978-1-032-81718-7: **$99.95**
Hb: 978-1-032-81823-8: **$250**
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Clinical Insights for Image-Guided Radiotherapy

Prostate

Mike Kirby , Kerrie-Anne Calder

Series: Series in Medical Physics and Biomedical Engineering

This book provides a clinical insight into image-guided radiation therapy (IGRT) for prostate cancer. It starts by setting the clinical scene, discussing immobilisation and standard IGRT practice and then considering important developments like IGRT with non-ionising radiation, adaptive radiotherapy, particle therapy, margins, hypofractionation, clinical outcomes, AI and training.

CRC Press
July 2024:328
Hb: 978-0-367-50722-0: **$120**
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2ND EDITION

Biophysical Chemistry

Dagmar Klostermeier University of Muenster, Biophysical Chemistry**, Markus G. Rudolph**

This second edition has been fully updated throughout with novel techniques, with a new chapter on advances in cryo-electron microscopy and exciting new content throughout on big data techniques, structural bioinformatics, systems biology and interaction networks, and artificial intelligence and machine learning. The book is organized in four parts, covering thermodynamics, kinetics, molecular structure and stability, and biophysical methods. Cross-references within and between these parts emphasize common themes and highlight recurrent principles.

CRC Press
September 2024:552
Hb: 978-1-032-06083-5: **$100**
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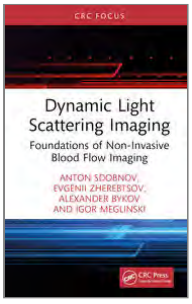
Dynamic Light Scattering Imaging

Foundations of Non-Invasive Blood Flow Imaging



Anton Sdobnov , Evgenii Zherebtsov , Alexander Bykov , Igor Meglinski

This book examines Dynamic Light Scattering and its derivatives Laser Doppler Flowmetry, Diffusing Wave Spectroscopy, Laser Speckle Contrast Imaging, and Doppler Optical Coherence Tomography for characterizing particle motion in turbid mediums like suspensions and solutions. It focuses on non-invasive blood flow imaging in biological tissues, detailing technological advancements, practical applications, and inherent challenges. Essential for professionals in biomedical optics and medical fields, as well as physics and engineering students, the book highlights its use in brain, skin, and micro-circulation studies, providing key insights and practical guidance.

CRC Press
October 2024:120
Hb: 978-1-032-73433-0: **$66.99**
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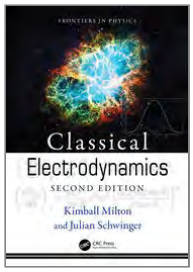
2ND EDITION

Classical Electrodynamics



Edited by **Kimball Milton , Julian Schwinger**

Series: Frontiers in Physics

Classical Electrodynamics captures Schwinger's inimitable lecturing style, in which everything flows inexorably from what has gone before. This anniversary edition offers a refreshing update while still maintaining Schwinger's voice. The book provides the student with a thorough grounding in electrodynamics in particular, and in classical field theory in general.

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eBook: 978-1-003-05736-9
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Elements of Electricity and Magnetism

Theory and Applications

R.K. Tyagi

This book covers the theory, concepts, and applications associated with electricity and magnetism. It discusses various fundamental aspects including Coulomb's Law, electric potential, capacitors, dielectrics, and paramagnetism. Aimed at undergraduate students with an elementary knowledge of mathematical analysis, it also includes solved problems at the end of each chapter for better understanding. Print edition not for sale in South Asia (India, Sri Lanka, Nepal, Bangladesh, Pakistan or Bhutan)

CRC Press
October 2024:378
Hb: 978-1-032-86775-5: **$130**
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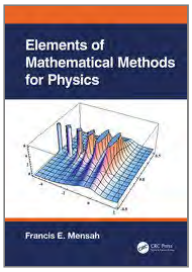
Elements of Mathematical Methods for Physics



Francis E. Mensah

"Elements of Mathematical Methods for Physics" provides students with an approachable and innovative introduction to key concepts of Mathematical Physics, accompanied by clear and concise explanations, relevant real-world examples, and problems that help them to master the fundamentals of Mathematical Physics. The topics are presented at a basic level, for students lacking a prior mathematical background.

CRC Press
August 2024:398
Hb: 978-1-032-76222-7: **$99.95**
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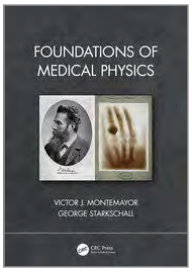
Foundations of Medical Physics



Victor J. Montemayor , George Starkschall University of Texas M.D. Anderson Cancer Center, Houston, USA

Foundations of Medical Physics has an overview of the history of cancer and cancer treatment along with a brief introduction to the fundamental principles of Radiobiology constitute Part I of this book, which serves as the motivation for the principles of Radiation Therapy, or cancer treatment with radiation. Part II contains the fundamental ideas from Modern Physics that form the foundation for an understanding of the approaches to treatment used in Radiation Therapy. Finally, Part III shows the applications of Parts I and II to Medical Imaging and Radiation Therapy.

CRC Press
June 2024:630
Pb: 978-0-429-19476-4: **$82.99**
Hb: 978-1-498-74618-2: **$200**
eBook: 978-1-003-47745-7
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2ND EDITION

Essentials of Functional MRI

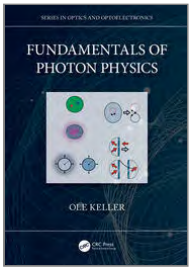
Patrick W. Stroman

Series: Series in Medical Physics and Biomedical Engineering

Essentials of Functional MRI is explained from the basic theory underlying magnetic resonance imaging. This includes how it can be used to detect dynamic variations in neural activity to become "functional" MRI, and how fMRI can be used for a variety of applications. The reader will gain an understanding of how fMRI is currently used, its limitations, and how it is still developing. This is achieved by explaining the core concepts and building on them to explain how fMRI data are acquired and what physiological information they provide.

CRC Press
November 2024:400
Hb: 978-1-032-87382-4: **$150**
* For **full contents** and more information, visit: **www.routledge.com/9781032873824**

Fundamentals of Photon Physics



Ole Keller

Series: Series in Optics and Optoelectronics

The photon, an abstract concept belonging to a global vacuum, only manifests itself during interaction with matter. Fundamentals of Photon Physics describes the richly faceted, basic theory of photon-matter interaction, selecting a wide number of topics. Together with the author's book Light - The Physics of the Photon (CRC, 2014), both written on a scholarly level, the reader is given a comprehensive exposition of photon wave mechanics, quantum optics and quantum electrodynamics (QED).

CRC Press
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Hb: 978-0-367-45726-6: **$170**
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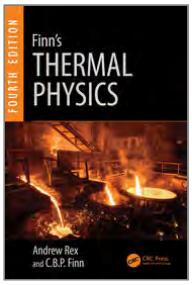
4TH EDITION

Finn's Thermal Physics



Andrew Rex University of Puget Sound, Tacoma, Washington, USA**, C.B.P. Finn** Sussex University, UK

While maintaining the style of the original work, the book now covers statistical mechanics and incorporates worked examples systematically throughout the text. It also covers more problems, and incorporates some essential updates, such as discussions on superconductivity, magnetism, Bose-Einstein condensation, and climate change.

CRC Press
April 2024:408
Pb: 978-1-032-28982-3: **$71.99**
Hb: 978-1-032-28903-8: **$180**
eBook: 978-1-003-29947-9
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5TH EDITION

Gauge Theories in Particle Physics 40th Anniversary Edition

A Practical Introduction, Two Volume Set

Ian J.R. Aitchison Professor Emeritus, University of Oxford, UK, and Visiting Scientist, SLAC National Accel. Lab, CA, USA**, Anthony J.G. Hey** Microsoft Research

The fifth edition of this well-established, highly regarded two-volume set continues to provide a fundamental introduction to advanced particle physics while incorporating substantial new experimental results, especially in the areas of the Higgs and top quark sectors, as well as CP violation and neutrino oscillations. It offers an accessible and practical introduction to the three gauge theories comprising the Standard Model of particle physics: quantum electrodynamics (QED), quantum chromodynamics (QCD), and the Glashow-Salam-Weinberg (GSW) electroweak theory.

CRC Press
June 2024:856
Pb: 978-1-032-72618-2: **$120**
Hb: 978-1-032-49158-5: **$300**
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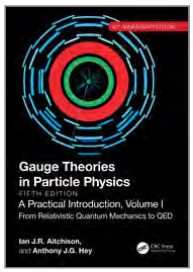
5TH EDITION

Gauge Theories in Particle Physics, 40th Anniversary Edition: A Practical Introduction, Volume 1

From Relativistic Quantum Mechanics to QED, Fifth Edition



Ian J R Aitchison , Anthony J.G. Hey , Ian J R Aitchison Professor Emeritus, University of Oxford, UK, and Visiting Scientist, SLAC National Accel. Lab, CA, USA**, Anthony J.G. Hey** Microsoft Research Connections, Redmond, Washington, USA

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CRC Press
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Hb: 978-1-032-53171-7: **$190**
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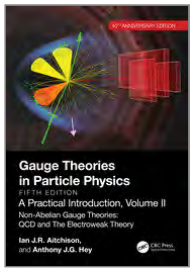
5TH EDITION

Gauge Theories in Particle Physics, 40th Anniversary Edition: A Practical Introduction, Volume 2

Non-Abelian Gauge Theories: QCD and The Electroweak Theory, Fifth Edition



Ian J R Aitchison , Anthony J.G. Hey , Ian J R Aitchison Professor Emeritus, University of Oxford, UK, and Visiting Scientist, SLAC National Accel. Lab, CA, USA**, Anthony J.G. Hey** Microsoft Research Connections, Redmond, Washington, USA

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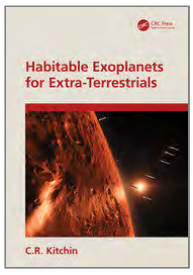
CRC Press
June 2024:470
Pb: 978-1-032-53361-2: **$71.99**
Hb: 978-1-032-53170-0: **$190**
eBook: 978-1-003-41166-6
* For **full contents** and more information, visit: **www.routledge.com/9781032533612**

Habitable Exoplanets for Extra-Terrestrials



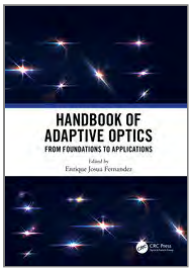
C.R. Kitchin

This book explores the questions of What, Why, When, How and Where might we might find extra-Terrestrials (a.k.a. Aliens) and their habitats throughout the Universe– and Who might they be? Starting from ourselves and the Earth and eventually speculating about life forms that might span multiple Universes, it provides an accessible introduction to extra-terrestrial life, the search for extra-terrestrial intelligence, and exoplanets.

CRC Press
December 2024:288
Hb: 978-1-032-15948-5: **$69.99**
* For **full contents** and more information, visit: **www.routledge.com/9781032159485**

Handbook of Adaptive Optics

From Foundations to Applications



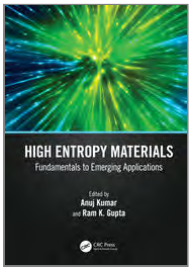
Edited by **Enrique Josua Fernandez** University of Murcia

Adaptive Optics (AO) is a technique allowing the manipulation of the wavefront of the light benefitting multiple fields like Microscopy, Optical Coherence Tomography, Visual Testing, Optical Communications, and Astronomical Optics, just to mention some examples. Handbook of Adaptive Optics contains a complete picture of the technique from the foundations to the most promising applications of AO in a variety of fields.

CRC Press
September 2024:272
Hb: 978-0-367-75276-7: **$190**
* For **full contents** and more information, visit: **www.routledge.com/9780367752767**

High Entropy Materials

Fundamentals to Emerging Applications



Edited by **Anuj Kumar , Ram K. Gupta** Pittsburg State University

High Entropy Materials covers the fundamental concepts of these materials and their emerging applications. To fulfil growing energy demand, scientists are looking for novel materials which can be used for the fabrication of high-performance energy devices. Many materials such as graphene, carbon nanotubes, and metal oxides are used in energy production and storage. A new class of metal oxides, multicomponent metal oxides, known as high entropy materials, have attracted considerable attention not only for their energy applications but also other emerging applications such as use in sensors, catalysts, and CO2 absorption.

CRC Press
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Hb: 978-1-032-48910-0: **$170**
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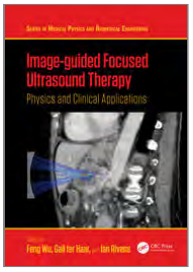
Image-guided Focused Ultrasound Therapy

Physics and Clinical Applications



Edited by **Feng Wu , Gail ter Haar , Ian Rivens** Institute of Cancer Research, Sutton, Surrey, United Kingdom

Series: Series in Medical Physics and Biomedical Engineering

Focusing on applications in cancer treatment, this book covers basic principles, practical aspects, and clinical applications of focused ultrasound therapy. It reviews the medical physics and bio-effects of focused ultrasound beams on living tissues, dosimetric methods and measurements, transducer engineering, image guidance and monitoring including MRI and ultrasound, treatment delivery systems and clinical applications.

CRC Press
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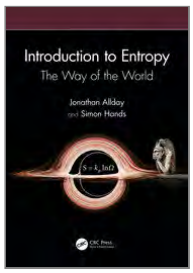
Introduction to Entropy

The Way of the World



Jonathan Allday The Royal Hospital School, Ipswich,UK**, Simon Hands**

This book will draw these diverse threads together and present entropy as one of the crucial physical concepts. It will cover a range of different applications of entropy, from the classical theory of thermodynamics, the statistical approach, entropy in quantum theory, information theory and finally its manifestation in black hole physics. Each will be presented in a manner suitable for both undergraduates and interested laypersons with no previous knowledge. The book will take an overview of these areas and see to what extent the concept of entropy is being treated in the same way in each, and also how it differs.

CRC Press
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Pb: 978-0-367-63866-5: **$66.95**
Hb: 978-0-367-63868-9: **$170**
* For **full contents** and more information, visit: **www.routledge.com/9780367638665**

Introduction to Functional Nanomaterials

Edited by **M. Anusuya , Fabian I. Ezema** Univeristy of Nigeria, Nsukka, Enugu, Nigeria

This book provides a comprehensive review of nanomaterials, including essential foundational examples of nanosensors, smart nanomaterials, nanopolymers, and nanotubes. Chapters cover their synthesis and characteristics, production methods, and applications, with specific sections exploring nanoelectronics and electro-optic nanotechnology, nanostructures, and nanodevices.

CRC Press
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Introduction to Modern Scientific Programming and Numerical Methods

Lubos Brieda , Joseph Wang

This book introduces the reader not only to the mathematical foundation but also to the programming paradigms encountered in modern hybrid software-hardware scientific computing. After completing the text, the reader will be well-versed in the use of different numerical techniques, programming languages, and hardware architectures, and will be able to select the appropriate software and hardware tool for their analysis.

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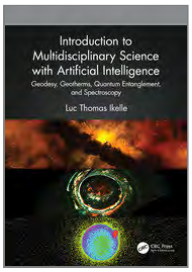
Introduction to Multidisciplinary Science with Artificial Intelligence

Geodesy, Geotherms, Quantum Entanglement, and Spectroscopy



Luc Thomas Ikelle

Technological developments and advances in scientific research have enabled the cross-fertilization of scientific disciplines. This book aims to provide readers with the tools necessary to address scientific and technological challenges in astronomy and space exploration.

CRC Press
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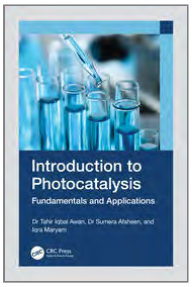
Introduction to Photocatalysis

Fundamentals and Applications



Tahir Iqbal Awan , Sumera Afsheen , Iqra Maryam

Explore the intriguing world of photocatalysis with Introduction to Photocatalysis: Fundamentals and Applications. This book explores the complexities of photocatalytic processes, investigating the contributing elements, nano-photocatalyst manufacturing methodologies, and their wide applications in the energy and environmental sectors. Additionally, sophisticated modification approaches that may be used to improve the efficiency of visible light-driven processes are discussed. Key features include novel methodologies of photocatalysts, providing an insight on fundamentals and methodology; and examples of efficient applications of photocatalysis.

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2ND EDITION

Introduction to Python for Science and Engineering

David J. Pine New York University, NY, USA

Series: Series in Computational Biophysics

Introduction to Python for Science and Engineering offers an incisive introduction to the Python programming language for use in any science or engineering discipline. The approach is pedagogical, which means starting with examples and extracting more general principles from that experience. Readers will learn the basics of Python syntax, data structures, input and output, conditionals and loops, user-defined functions, plotting, animation, and visualization. They will also learn how to use Python for numerical analysis, including curve fitting, numerical integration, solutions to differential equations, and fast Fourier transforms.

CRC Press
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Pb: 978-1-032-67390-5: **$66.99**
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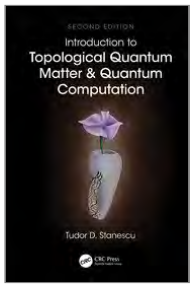
2ND EDITION

Introduction to Topological Quantum Matter & Quantum Computation



Tudor D. Stanescu West Virginia University, Morgantown, USA

Addressing these and other related questions, Introduction to Topological Quantum Matter & Quantum Computation provides an introduction to and a synthesis of a fascinating and rapidly expanding research field emerging at the crossroads of condensed matter physics, mathematics, and computer science. Providing the big picture, this book is ideal for graduate students and researchers entering this field as it allows for the fruitful transfer of paradigms and ideas amongst different areas, and includes many specific examples to help the reader understand abstract and sometimes challenging concepts.

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eBook: 978-1-003-22604-8
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IoT Sensors

An Exploration of Sensors for Internet of Things

Vinod Kumar Khanna CSIR-Central Electronics Engineering Research Institute, India

Series: Series in Sensors

This book introduces the basics of internet of things (IoT), and explores the foundational role of sensors in internet-of-things applications. Internet of things is a network of devices and objects: sensors, actuators, hardware, software, human beings, domestic appliances, health monitoring equipment, and other things connected to the internet, which is designed to operate in a coordinated fashion to receive, process and interpret signals and take appropriate action.

CRC Press
November 2024:312
Hb: 978-1-032-44780-3: **$170**
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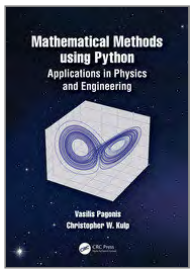
Mathematical Methods using Python

Applications in Physics and Engineering



Vasilis Pagonis McDaniel College, Westminster, MD, USA **, Christopher Wayne Kulp** Lycoming College, Williamsport, PA, USA

This advanced undergraduate textbook presents a new approach to teaching mathematical methods for scientists and engineers. It provides a practical, pedagogical introduction to utilizing Python in Mathematical and Computational Methods courses. Both analytical and computational examples are integrated from its start.

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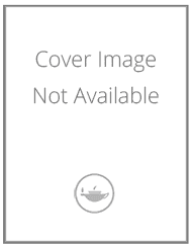
Modern Intermediate Mechanics



Walter Wilcox Baylor University, Waco, Texas, USA

Modern Intermediate Mechanics (MIM) covers all the basic concepts of classical mechanics. It can serve as a foundational text for a one-semester course or a complete two-semester sequence for intermediate-level undergraduate students in physics or engineering. It includes a comprehensive coverage of the ideas at a basic level (Part I) and at an advanced level (Part II).

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Hb: 978-1-032-64996-2: **$99.99**
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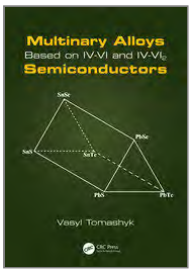
Multinary Alloys Based on IV-VI and IV-VI2 Semiconductors



Vasyl Tomashyk

This book will be of interest to undergraduate and graduate students studying materials science, solid state chemistry, and engineering. It will also be relevant for researchers at industrial and national laboratories, in addition to researchers of phase equilibria, inorganic chemists, and solid state physicists.

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Non-Equilibrium Statistical Mechanics

James H. Luscombe

Statistical mechanics provides a framework for relating the properties of macroscopic systems (large collections of atoms, such as in a solid) to the microscopic properties of its parts. However, what happens when macroscopic systems are not in thermal equilibrium, where time is not only a relevant variable, but also essential? That is the province of nonequilibrium statistical mechanics – there are many ways for systems to be out of equilibrium! The subject is governed by fewer general principles than equilibrium statistical mechanics and consists of a number of different approaches for describing nonequilibrium systems.

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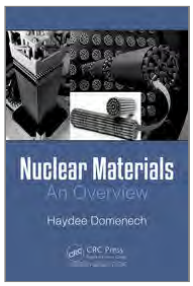
Nuclear Materials

An Overview



Haydee Domenech

This book reviews the critical scope of nuclear materials, which play an essential role in decreasing greenhouse gas emissions. It traces historical landmarks from the years preceding World War II to the atomic bomb era. Key topics covered include the concept of nuclear materials and their connection to the Non-Proliferation Treaty (NPT), the steps of the nuclear fuel cycle, and advanced reactor technologies. Additionally, the book addresses safety and security considerations, including radioactive waste and spent fuel management.

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Nuclear Theory in the Age of Multimessenger Astronomy

Edited by **Omar Benhar** Istituto Nazionale di Fisica Nucleare, Roma, Italy**, Alessandro Lovato , Andrea Maselli , Francesco Pannarale**

This book provides a self-contained account of neutron star properties, microscopic nuclear dynamics and the recent observational developments in multimessenger astronomy. It also discusses the unprecedented possibilities to shed light on long standing and fundamental issues, such as the validity of the description of matter in terms of pointlike baryons and leptons and the appearance of deconfined quarks in the high density regime.

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Numerical Methods

Classical and Advanced Topics

Shanmuganathan Rajasekar

This book presents a pedagogical treatment of a range of numerical methods to suit the needs of undergraduate and postgraduate students, and teachers and researchers in physics, mathematics, and engineering. For each method, the derivation of the formula/algorithm, error analysis, case studies, applications in science and engineering and the special features are covered. A detailed presentation of solving time-dependent Schrödinger equation and nonlinear wave equations, along with the Monte Carlo techniques will aid in students' understanding of several physical phenomena including tunnelling, elastic collision of nonlinear waves, and diffusion of neutrons through simulation study.

CRC Press
May 2024:550
Pb: 978-1-032-64991-7: **$61.99**
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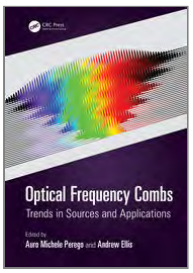
Optical Frequency Combs

Trends in Sources and Applications



Edited by **Auro Michele Perego , Andrew Ellis**

The book aims at showcasing recent advances through contributions by key players in a multifaceted research ecosystem, and at the same time at providing a valuable service to the community, by offering an as much comprehensive as possible review which, at the same time, highlights challenges to be solved and promising future directions.

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Origins of Life Volume II

Contemplations and Doubts

Vladivoj Valkovic

In Origins of Life Volume II, the life, as well as its origin, are inspected from traditional and unexpected points of view. The book takes an interdisciplinary approach, discussing astrobiology, chemical evolution and how the universe accommodates life, molecular biology, and philosophy. It is an open-minded approach, fully referenced throughout, and each chapter includes a further reading section for anyone wishing to learn more about that perspective on the origins of life.

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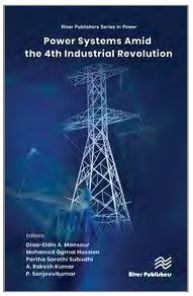
Power Systems Amid the 4th Industrial Revolution



Edited by **Diaa-Eldin A. Mansour , Mohamed Gamal Hussien , Partha Sarathi Subudhi , A. Rakesh Kumar , Sanjeevikumar Padmanaban**

Series: River Publishers Series in Power

This book discusses the operation of power systems amid the 4th industrial revolution and the value of Industry 4.0 technologies to grid operators and end customers. The concept of smart grids was introduced years ago, but their practical implementation into power grids was delayed as the information communication technology infrastructure was not ready.

River Publishers
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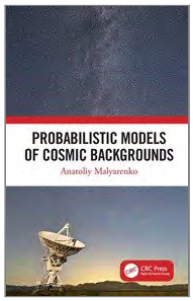
Probabilistic Models of Cosmic Backgrounds



Anatoliy Malyarenko Malardalen University, Vasteras, Sweden

Combining research methods from various areas of mathematics and physics, Probabilistic Models of Cosmic Backgrounds describes the isotropic random sections of certain fiber bundles and their applications to creating rigorous mathematical models of both discovered and hypothetical cosmic backgrounds.

CRC Press
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Problems in Quantum Mechanics and Field Theory with Mathematical Modelling

Aleksander V. Chichurin , Elena M. Ovsiyuk , Viktor M. Red'kov

In Problems in Quantum Mechanics and Field Theory with Mathematical Modelling, a number of exactly solvable problems in electrodynamics and in quantum-mechanics of particles with different spins are presented. The main topics covered include: the Cox scalar particle with intrinsic structure in presence of the magnetic field in the spaces of constant curvature, Euclid, Riemann, and Lobachevsky.

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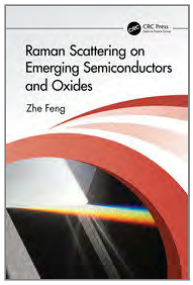
Raman Scattering on Emerging Semiconductors and Oxides



Zhe Feng

Raman Scattering on Emerging Semiconductors and Oxides presents Raman scattering studies. It describes the key fundamental elements in applying Raman spectroscopies to various semiconductors and oxides without complicated and deep Raman theories. Across nine chapters, it covers:
• SiC and IV-IV semiconductors, • III-GaN and Nitride semiconductors • III-V and II-VI semiconductors,
• ZnO-based and GaO-based semiconducting oxides,
• Graphene, ferroelectric oxides and other emerging materials,

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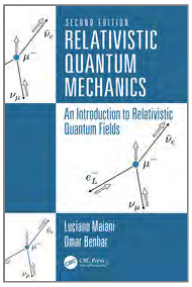
2ND EDITION

Relativistic Quantum Mechanics

An Introduction to Relativistic Quantum Fields



Luciano Maiani University of Rome, La Sapienza, and INFN Sezione di Roma, Rome, Italy**, Omar Benhar** Istituto Nazionale di Fisica Nucleare, Roma, Italy

Written by two of the most prominent leaders in particle physics, Relativistic Quantum Mechanics: An Introduction to Relativistic Quantum Fields provides a classroom-tested introduction to the formal and conceptual foundations of quantum field theory. Designed for advanced undergraduate- and graduate-level physics students, the text only requires previous courses in classical mechanics, relativity, and quantum mechanics.

CRC Press
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Hb: 978-1-032-56594-1: **$100**
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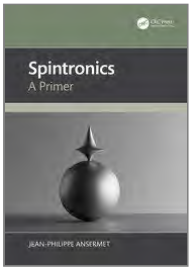
Spintronics

A Primer



Jean-Philippe Ansermet

A sound understanding of magnetism, transport theory, spin relaxation mechanisms, and magnetization dynamics is necessary to engage in spintronics research. In this primer, special effort has been made to give straightforward explanations for these advanced concepts. This book will be a valuable resource for graduate students in spintronics and related fields. Concepts of magnetism such as exchange interaction, spin-orbit coupling, spin canting, and magnetic anisotropy are introduced.

CRC Press
August 2024:472
Hb: 978-1-032-43233-5: **$99.95**
* For **full contents** and more information, visit: **www.routledge.com/9781032432335**

Super-Resolution Microscopy for Material Science

Edited by **Lorenzo Albertazzi , Peter Zijlstra**

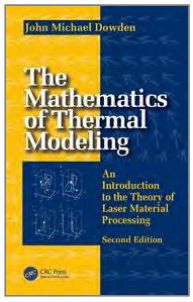
This book describes the theory, principles, and practice of super-resolution microscopy in the field of materials science and nanotechnology. There is a growing interest in the applications of SRM beyond biology as new synthetic materials, such as nanoscale sensors and catalysts, nanostructured materials, functional polymers, and nanoparticles, have nanoscopic features that are challenging to visualize with traditional imaging methods.

CRC Press
March 2024:248
Hb: 978-1-032-10367-9: **$140**
eBook: 978-1-003-22068-8
* For **full contents** and more information, visit: **www.routledge.com/9781032103679**

2ND EDITION

The Mathematics of Thermal Modeling

An Introduction to the Theory of Laser Material Processing, 2e



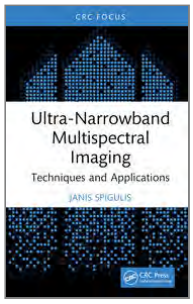
John Michael Dowden

The Mathematics of Thermal Modeling 2nd Edition provides an introduction to the basics of the mathematics and physics needed to understand and use the physical principles employed in constructing models of a number of aspects of thermal modeling in industrial processes. The book demonstrates how insight can be gained from mathematical enquiry at a simple level and helps workers understand the way in which more sophisticated models can be constructed. Some necessary but less familiar mathematical techniques are explained in greater detail than before and some discussion of wave-like features in welds is now included.

CRC Press
August 2024:288
Hb: 978-1-032-65777-6: **$120**
* For **full contents** and more information, visit: **www.routledge.com/9781032657776**

Ultra-Narrowband Multispectral Imaging

Techniques and Applications



Janis Spigulis

This book provides insight into an unconventional modality of imaging where several spectral images are captured by a single snapshot under multi-laser illumination, ensuring high-speed imaging within extremely narrow spectral bands. This method has three distinct advantages, if compared to common commercial multispectral imaging systems - considerably improved spectral selectivity (or colour sensitivity) of imaging, avoided motion artefacts in the spectral image sets, and simpler/faster image processing as integrals over the spectral bands of imaging are replaced by numbers of the fixed working wavelengths.

CRC Press
September 2024:104
Hb: 978-1-032-75729-2: **$64.99**
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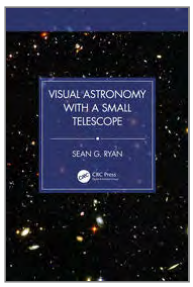
Visual Astronomy with a Small Telescope



Sean G. Ryan

The book presents a practical guide to using a small astronomical telescope of a size that corresponds to most "first" telescopes – around 75 to 150 mm, i.e. 3 to 6 inches, in diameter. The book is intended for people who are sufficiently interested in astronomy to have purchased a small telescope or received one as a gift, but who are still developing experience of using one.

CRC Press
September 2024:160
Pb: 978-1-032-81289-2: **$29.95**
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Visualizing Quantum Mechanics with Python

Steve Spicklemire

The goal of this book is to reduce the complexity and clarify the abstractions with concrete visual examples driven by simple python programs. It is assumed that the reader is concurrently taking a course in quantum mechanics, or self-studying quantum mechanics, but is looking for supplementary material to help with understanding and visualizing how quantum mechanics works.

CRC Press
June 2024:60
Pb: 978-1-032-56924-6: **$26.99**
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Writing In-House Medical Device Software in Compliance with EU, UK, and US Regulations

Philip S. Cosgriff , Matthew J. Memmott

This book is a comprehensive guide to producing medical software for routine clinical use. It is a practical guidebook for medical professionals developing software to ensure compliance with medical device regulations for software products intended to be sold commercially, shared with healthcare colleagues in other hospitals, or simply used in-house. It compares the latest regulatory requirements in different global territories, including the most recent EU regulations as well as current UK and US regulations.

CRC Press
March 2024:290
Pb: 978-1-032-29350-9: **$48.99**
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2ND EDITION

XAFS for Everyone

Scott Calvin Lehman College, the City University of New York

XAFS for Everyone provides a practical, thorough guide to x-ray absorption fine-structure (XAFS) spectroscopy for both novices and seasoned practitioners from a range of disciplines.This second edition now includes chapters on spatial and temporal resolution, alternative measurement modes including resonant inelastic x-ray scattering (RIXS) and high-energy resolution fluorescence detection (HERFD), and an expanded chapter on experimental design. In addition, this edition adds new sections on wavelet transforms, blind source separation, free electron lasers, and theoretical XANES standards, as well as three new case studies.

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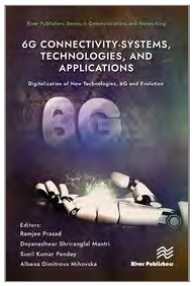
6G Connectivity-Systems, Technologies, and Applications

Digitalization of New Technologies, 6G and Evolutio



Edited by **Ramjee Prasad , Dnyaneshwar Shriranglal Mantri , Sunil Kumar Pandey , Albena Dimitrova Mihovska**

Series: River Publishers Series in Communications and Networking

This book covers need for 6G connectivity arising from the pursuit of higher data speeds, ultra-low latency, massive IoT connectivity, enhanced spectral efficiency, and the facilitation of new and transformative applications. By addressing these drivers and expectations, 6G aims to revolutionize wireless communication, opening up a realm of possibilities for industries, societies, and individuals.

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A Guide to Software Quality Engineering

Shravan Pargaonkar

Dive into the fundamental principles of software quality engineering, understanding the critical role it plays in ensuring customer satisfaction, user experience, and the overall success of your software products. Whether you're a seasoned professional or a budding enthusiast, this book caters to all levels of expertise. Topics cover include: DevOps, software testing, requirements, Agile, and Lean.

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A Reference Manual for Data Privacy Laws and Cyber Frameworks

Ravindra Das

Series: Cyber Shorts

In this book we detail the tenets and provisions of three key Data Privacy Laws: Ø The GDPR Ø The CCPA Ø The CMMC We also provide a general framework at the end as to how a business can come into compliance with these various Data Privacy Laws. Also, we first provide an in depth overview of the importance of Data and Datasets, and how they are so relevant to these Data Privacy Laws just mentioned.

CRC Press
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Pb: 978-1-032-80449-1: **$59.99**
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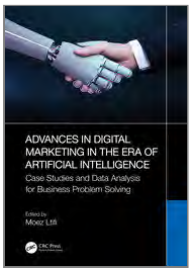
Advances in Digital Marketing in the Era of Artificial Intelligence

Case Studies and Data Analysis for Business Problem Solving



Edited by **Moez Ltifi** Sfax University, Tunisia

This book highlights the technological advances that are transforming the future of digital marketing and covers important areas of research in this field. The book demonstrates advances in digital marketing as well as tools, techniques, methods and strategies based on artificial intelligence. It also identifies gaps in research into effective digital marketing tools, techniques and methods, and will bridge the interaction between digital marketing strategies and organisations' business plans on the one hand, and customer relations on the other, in the age of artificial intelligence.

CRC Press
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AI and IoT Technology and Applications for Smart Healthcare Systems

Edited by **Alex Khang**

Series: Advances in Computational Collective Intelligence

Covering, methodologies, technologies, approaches, models, frameworks, theory, and practice, this book examines how to meet the challenges associated with applying AI-collaborative IoT technology as well as Big Data in the design and implementation of advanced infrastructure for the smart healthcare system. This book targets a mixed audience of students, engineers, scholars, researchers, academics and professionals who are learning, researching, and working in the field of healthcare.

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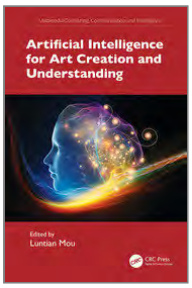
Artificial Intelligence for Art Creation and Understanding



Edited by **Luntian Mou**

Series: Multimedia Computing, Communication and Intelligence

AI-Generated Content (AIGC) is a revolutionary engine for digital content generation. AI is capable of not only creating paintings or music comparable to human masterpieces, but also understanding and appreciating art works. For both professionals and amateurs, AI is an enabling tool and a companion to open and enjoy a new world of art. This book covers state-of-the-art AI technologies for art creation, understanding, and evaluation. Each chapter provides an entry point for readers, presenting SOTA AI technologies for art creation and understanding, and covers the fascinating combination of AI with traditional Chinese art.

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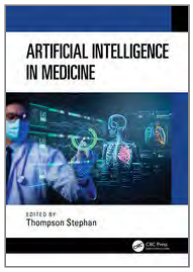
Artificial Intelligence in Medicine



Edited by **Thompson Stephan** M. S. Ramaiah University of Applied Sciences, India

In the ever-evolving realm of healthcare, "Artificial Intelligence in Medicine" emerges as a trailblazing guide, offering an exhaustive exploration of the transformative power of Artificial Intelligence (AI). Crafted by leading experts in the field, this book sets out to bridge the gap between theoretical understanding and practical application, presenting a comprehensive journey through the foundational principles, cutting-edge applications, and the potential impact of AI in the medical landscape.

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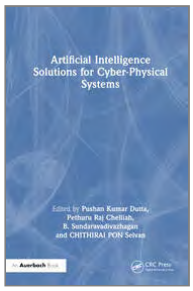
Artificial Intelligence Solutions for Cyber-Physical Systems



Edited by **Pushan Kumar Dutta** Amity University Kolkata**, Pethuru Raj , B. Sundaravadivazhagan** University of Technology and Applied Sciences-Al Mussana**, CHITHIRAI PON Selvan**

This book focuses on the design, implementation, and management of secure Human Cyber-Physical Systems (HCPSs) in smart manufacturing environments. It covers a wide range of topics, including risk assessment, security architecture, data privacy, and standard specifications for HCPSs. The topic highlights the importance of securing communication protocols, the role of artificial intelligence and machine learning in threat detection and mitigation, and the need for robust cybersecurity frameworks in the context of smart manufacturing.

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Artificial Intelligence-Based 6G Networking

Radhika Ranjan Roy United States Army Research Laboratory, USA

This book deals with the emerging 6G networking and services, which are expected to be implemented in the year 2030. With 6G, a paradigm shift is happening with the deep convergence of computing and communication with inherent support of AI in network functional entities. 6G networks will be using AI native interfaces from radio access networks (RANs), wireline access networks, and long-haul wide area networks including smart intelligent user equipment (UE), switches/routers, application servers, and databases. This book provides a unified framework for the deep convergence of computing and communications, that can be be jointly optimized as a single integrated system using AI.

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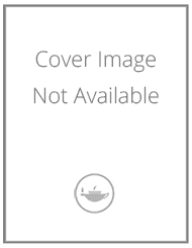
Aspects of Quality Management in Value Creating in the Industry 5.0 Way



Edited by **Mohamed Abouhawwash** Mansoura University, Egypt.**, Joanna Rosak-Szyrocka** Czestochowa University of Technology, Poland**, Shashi Kant Gupta**

The book 'Aspects Of Quality Management In Value Creating In The Industry 5.0 Way' focuses on the challenges that companies in the field of quality management in Industry 5.0 face, particularly in relation to client value aspects. Industry 5.0 suggests a new stage of industrial growth. With its innovative approach, Industry 5.0 will contribute to the resolution of the manufacturing-social need mismatch issue. The book devotes a lot of space to the issues of client satisfaction, cybersecurity, e-commerce, TQM, and collaborative work between robots and humans in the company.

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Bioinformatics of the Brain

Edited by **Kayhan Erciyes , Tuba Sevimoğlu** Hamidiye Institute of Health Sciences, Turkey

Recent advancements in neuroimaging technologies has opened new frontiers in neuroscience enabling unprecedented finer analysis of the brain functions. This relatively new approach of brain analysis which may be termed Bioinformatics of the Brain is the main subject of this volume aiming to provide a thorough review on various bioinformatics approaches for analyzing the functioning of the brain and understanding brain diseases such as neurodegenerative diseases, brain tumors, and neuropsychiatric disorders. Authors from various disciplines in this volume each focus on a different aspect aiming to expand our understanding of this area of research.

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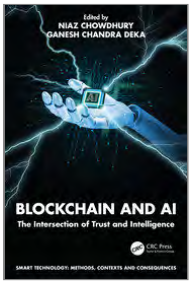
Blockchain and AI

The Intersection of Trust and Intelligence



Edited by **Niaz Chowdhury , Ganesh Chandra Deka** DG(DGT), MSDE, GoI

Series: Smart Technology

In the rapidly evolving landscape of the digital age, two technologies stand out for their transformative potential: Artificial Intelligence (AI) and Blockchain. This book offers an incisive exploration of the confluence between these technological titans, shedding light on the synergies, challenges, and innovations that arise at this intersection. The chapters explore thought-provoking analyses, informed by cutting-edge research and expert perspectives, that navigate the nuanced interplay of decentralised ledger technology and intelligent systems.

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Atif Ali

Delves into the revolutionary world of blockchain technology, AI, DeFi, metaverses, and NFTs, highlighting its transformative impact across various industries. Explores the intersection of cutting-edge technologies that are reshaping the digital landscape. Set apart by its interdisciplinary approach, the book demystifies complex concepts, making them accessible to a broad audience, including IT professionals, entrepreneurs, and students.

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A blockchain-based distributed framework can be used for automobiles in the smart city. This framework can include a novel miner node selection algorithm for the blockchain-based distributed network architecture. This book explores how blockchain technology can be used in the automotive industry, from smart manufacturing to the smart city.

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Cognitive Hack and Cognitive Risk Set

James Bone Global Compliance Associates, LLC, Lincoln, Rhode Island, USA**, Jessie H Lee** Better Future Strategies, LLC

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Cognitive Hack explores a broad cross section of research and actual case studies to draw out new insights that may be used to build a benchmark for IT security professionals. This research takes a deeper dive beneath the surface of the analysis to uncover novel ways to mitigate data security vulnerabilities, connect the dots and identify patterns in the data on breaches. Cognitive Risk is a book about the least understood, but most pervasive risk to mankind – cognitive risks. Cognitive risks are subconscious and unconscious influence factors on human decision-making: heuristics and biases.

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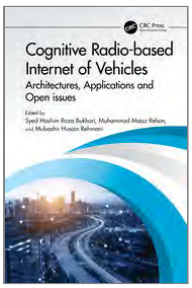
Cognitive Radio-based Internet of Vehicles

Architectures, Applications and Open issues



Edited by **Syed Hashim Raza Bukhari , Muhammad Maaz Rehan , Mubashir Husain Rehmani**

The incorporation of Cognitive Radio (CR) into the Internet of Vehicles (IoV) has emerged as the Intelligent Transportation System (ITS). Section 1 covers the aspects of cognitive radio when it provides support to IoV. The challenges which limit the performance of ITS are highlighted in this chapter. Section 2 covers the applications of ML techniques to the CR-IoV systems and highlights their issues and challenges. Section 3 covers the examination of ML in conjunction with Data Science applications which further widens the scope of the readership.

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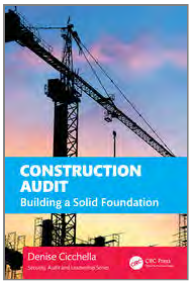
Construction Audit

Building a Solid Foundation



Denise Cicchella

Series: Security, Audit and Leadership Series

Construction Audit is becoming more and more prevalant, and organizations are appreciating its importance. Learning the basics of construction auditing can provide valuable knowledge and skills for professionals and students in the construction industry, offering insights into financial management, risk mitigation, compliance, and overall project oversight. This book is not just for auditors, however. It could be used by project managers, integrity monitors, construction managers and anyone else who wants to understand the elements that go into creating a successful project. Legal teams involved in contracting and overpayment recovery will also benefit.

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Continuous Auditing with AI in the Public Sector

Edited by **Lourens J. Erasmus** University of South Africa, South Africa**, Sezer Bozkus Kahyaoğlu** Uni of South Africa Financial Gov Dep, South Africa

Series: Security, Audit and Leadership Series

This book deals with the effects of current technological developments in the public sector on auditing and risk management activities. Therefore, it is a resource for public internal auditors to create a digital audit strategy based on artificial intelligence and blockchain-based applications. Institutionalisation of their structures is important for public sector internal auditors, which is a critical position that ensures institutionalisation. This book will be pioneering work based on CA/CM approaches using various AI and blockchain-based tools, and techniques.

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Controlling Privacy and the Use of Data Assets Set

Ulf Mattsson

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The book uses practical lessons learned in applying real-life concepts and tools to help security leaders and their teams craft and implement strategies. These projects deal with a variety of use cases and data types. A common goal is to find the right balance between compliance, privacy requirements, and the business utility of data.

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Crypto Millionaires

Blockchain: A Chance for All?

Mateusz Mach

Blockchain: The Key to the World of Cryptocurrencies. A word that sounds like a promise of wealth. But what exactly is Blockchain? Some see Blockchain as a savior from greedy bankers, while others view it as a tool for building cryptocurrencies that undermine central banks. Which image is closer to reality? The story of Blockchain is not just a tale of mathematical experiments. It's primarily a story of the age-old attempt to record human activities and the value that flows from them. This time, however, the goal is to make it accessible to everyone on equal terms. But will it truly be equal?

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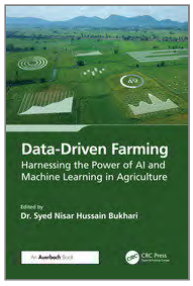
Data-Driven Farming

Harnessing the Power of AI and Machine Learning in Agriculture



Edited by **Syed Nisar Hussain Bukhari**

The book explores how the latest advances in technology can help make better decisions and maximize yields. It provides a detailed overview of the intersection of data, AI, and machine learning in agriculture. Offering real-world examples and case studies it demonstrates how these tools can help farmers improve efficiency, reduce waste, and increase profitability. It examines how AI and ML in agriculture can be used to achieve sustainable and profitable farming practices. The book also gives introduction to the basics of data-driven farming, including an overview of the key concepts, tools, and technologies that are essential for success.

Auerbach Publications
June 2024:300
Pb: 978-1-032-77872-3: **$64.95**
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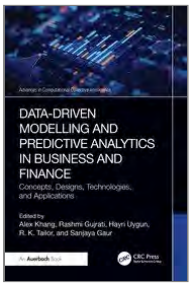
Data-Driven Modelling and Predictive Analytics in Business and Finance

Concepts, Designs, Technologies, and Applications



Edited by **Alex Khang , Rashmi Gujrati , Hayri Uygun , R. K. Tailor , Sanjaya Gaur**

Series: Advances in Computational Collective Intelligence

This book focuses on the opportunities and challenges for data-driven modelling and predictive analytics for business systems. It covers fundamental concepts as well as advanced techniques, technologies, and tools. It delves into such areas and applications as data-driven robotics process automation systems, smart cities and urban development, smart healthcare, and smart communication technologies. The book discusses technology in the context of innovation, business development, and business management.

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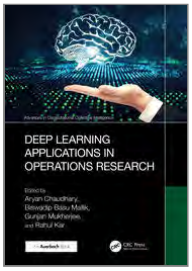
Deep Learning Applications in Operations Research



Edited by **Aryan Chaudhary** Chief Scientific Advisor, Bio Tech Sphere Research, India**, Biswadip Basu Mallik** Institute of Engineering and Management, India**, Gunjan Mukherjee** Brainware University, India**, Rahul Kar** Kalyani Mahavidyalaya, India

Series: Advances in Computational Collective Intelligence

The book delves into how to apply deep learning to areas of operations research. The book focuses on decision modeling and model optimization and features case studies. It looks at a wide selection of applications from healthcare to finance.

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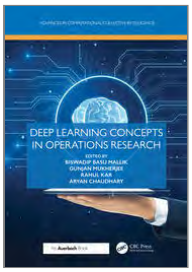
Deep Learning Concepts in Operations Research



Edited by **Biswadip Basu Mallik** Institute of Engineering and Management, India**, Gunjan Mukherjee** Brainware University, India**, Rahul Kar** Kalyani Mahavidyalaya, India**, Aryan Chaudhary** Chief Scientific Advisor, Bio Tech Sphere Research, India

Series: Advances in Computational Collective Intelligence

The book provides mathematician an overview of AI and machine learning before delving into how to apply these to operations research. The book focuses decision modeling and optimization models and features case studies.

Auerbach Publications
August 2024:282
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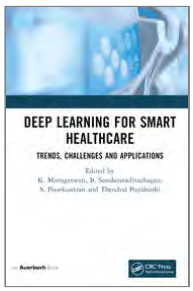
Deep Learning for Smart Healthcare

Trends, Challenges and Applications

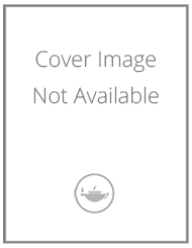


Edited by **K. Murugeswari , B. Sundaravadivazhagan , S Poonkuntran** VIT Bhopal University**, Thendral Puyalnithi** ASSISTANT PROFESSOR SENIOR, DEPT OF ARTIFICIAL INTELLIGENCE&DATA SCIENCE, MEPCO SCHLENK ENGI COLLEGE

Hospitals are currently not able to sufficiently meet the demand for quality patient outcomes due to increasing population and diversifying diseases. The shift from traditional healthcare approaches to ones assisted by machine leering hold promise. Managing patient data is critical and complex, and deep learning can provide solutions to manage such complexity. The book is a baseline reference for researchers and academicians who are investigating the application of deep learning algorithms in the healthcare sector. It focuses on medical imaging and healthcare data analytics.

Auerbach Publications
May 2024:308
Hb: 978-1-032-45581-5: **$210**
eBook: 978-1-003-46960-5
* For **full contents** and more information, visit: **www.routledge.com/9781032455815**

Digital Twin Technology and Applications



Edited by **A. Daniel , Srinivasan Sriramulu , N. Partheeban , SANTHOSH JAYAGOPALAN**

The book focuses on the technological advances that digital twin applications require. It discusses the creation of intelligent systems, services, and environments and addresses real-time Big Data communication using the Internet of Things (IoT). The goal of this book is to examine problems, concerns, and solutions for supporting digital twins with Big Data and Artificial Intelligence (AI). The book also explains how to stream real-time big data on an IoT platform using various ways and strategies.

Auerbach Publications
September 2024:344
Hb: 978-1-032-43059-1: **$200**
* For **full contents** and more information, visit: **www.routledge.com/9781032430591**

Digital Forensics and Cyber Crime Investigation

Recent Advances and Future Directions

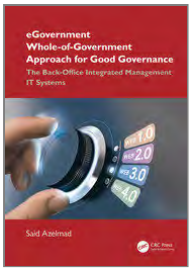
Edited by **Ahmed A. Abd El-Latif , Lo'ai A. Tawalbeh** Texas A&M University**, Manoranjan Mohanty** University of Technology Sydney**, Brij B. Gupta** Director, International Center for AI & CCRI**, Konstantinos E. Psannis**

In the ever-evolving landscape of digital forensics and cyber-crime investigation, staying ahead with the latest advancements is not just advantageous—it's imperative. This book serves as a crucial bridge, connecting the dots between the present knowledge base and the fast-paced developments in this dynamic field. This book aims to serve as a beacon for practitioners, researchers, and students who are navigating the intricate world of digital forensics and cyber security. By offering a blend of recent advancements and speculative future directions, it not only enriches the reader's understanding of the subject matter but also inspires innovative thinking.

CRC Press
October 2024:304
Hb: 978-1-032-07539-6: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032075396**

eGovernment Whole-of-Government Approach for Good Governance

The Back-Office Integrated Management IT Systems



Said Azelmad University of Moulay Ismail, Morocco

The book embarks on the transformative reforms in Public Administration at the nexus of digital innovation and governance paradigms in Morocco. The book addresses the new paradigms of eGovernment, which transcends traditional boundaries of public administration, offering a meticulous blend of theoretical depth and practical insights, through its sophisticated methodological approach. The book investigates eGovernment Whole-of-Government Approaches (WGA) efficiency in back-office transactions (G2G) for promoting good governance ethics, through its theoretical underpinnings and practical applications.

CRC Press
September 2024:216
Hb: 978-1-032-61083-2: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032610832**

Digital Skill Development for Industry 4.0

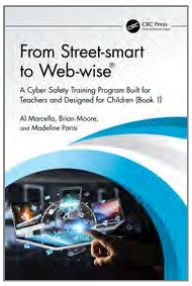
Edited by **P Kaliraj , G Singaravelu , T. Devi**

This book details the skills needed to face the Volatile, Uncertain, Complex and Ambiguous (VUCA) world of Industry 4.0. It covers the professional skills, cognitive learning, critical thinking skills among modern learners, motivation and student engagement, invoking interest of students, student engagement in e-learning, contextual learning, experimental learning, multi-disciplinary learning, team collaboration using digital technologies, digital evaluation tools, student assessment, teacher capacity building and gender-responsive digital skills training

Auerbach Publications
September 2024:280
Hb: 978-1-032-53197-7: **$200**
* For **full contents** and more information, visit: **www.routledge.com/9781032531977**

From Street-smart to Web-wise®

A Cyber Safety Training Program Built for Teachers and Designed for Children (Book 1)



Al Marcella , Brian Moore , Madeline Parisi

In a world where tiny fingers are as familiar with touchscreens as they are with crayons, ensuring our children's safety online has never been more crucial. "From Street-smart to Web-wise®: A Safety Training Manual Built for Teachers and Designed for Children," isn't just another book—it's a passionate call to action for teachers, a roadmap to navigate the digital landscape safely, with confidence and care. Written by authors, who are recognized experts in their respective fields, this accessible manual is a timely resource for educators. Dive into engaging content that illuminates the importance of cyber safety, not only in our classrooms but extending into the global community.

CRC Press
September 2024:192
Pb: 978-1-032-73784-3: **$59.95**
Hb: 978-1-032-73173-5: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032737843**

From Street-smart to Web-wise®

A Cyber Safety Training Program Built for Teachers and Designed for Children (Book 2)

Al Marcella , Brian Moore , Madeline Parisi

Book 2 continues as the tiny fingers in Book 1 Grades K-2 grow and become more familiar with online activities. The critical job of ensuring our children's safety expands as students become more independent and begin to have greater online autonomy. "From Street-smart to Web-wise®: A Cyber Safety Training Manual Built for Teachers and Designed for Children," isn't just another book—it's a passionate call to action for teachers, a roadmap to navigate the digital landscape safely, with confidence and care.

CRC Press
November 2024:272
Pb: 978-1-032-73860-4: **$59.99**
Hb: 978-1-032-73175-9: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032738604**

Generative AI

Phishing And Cybersecurity Metrics

Ravindra Das President, HTG Solutions, IL, USA

Series: Cyber Shorts

The Cybersecurity Landscape is for sure changing. The advent of Generative AI is making this much worse. For example, a Cyberattacker can now use something like ChatGPT to craft the content for Phishing Emails that are so convincing that it is almost to tell the difference of what is real and fake. This is also clearly evident in the use of Deepfakes, where real people are replicated into fake ones in order to create videos to lure the unsuspecting victims to a fake website. But, Generative AI can also be used for the good also, to combat Phishing Attacks. This is the topic of this book.

CRC Press
October 2024:168
Pb: 978-1-032-82268-6: **$32.99**
Hb: 978-1-032-82096-5: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032822686**

Generative AI and Cyberbullying

Ravindra Das President, HTG Solutions, IL, USA

The scalability and diversity of Gen AI has allowed it be used in a wide myriad of industries and applications. But although it has been primarily designed to serve the greater good, it can also be used for very nefarious purposes, such as Online Harassment and Cyberbullying. In this particular book, we actually take the good side of Gen AI, provide an overview as to how it can be used to help combat Cyberbullying.

CRC Press
November 2024:120
Pb: 978-1-032-66601-3: **$32.99**
Hb: 978-1-032-66600-6: **$140**
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Global Audit Leadership

A Practical Approach to Leading a Global Internal Audit (GIA) Function in a Constantly Changing Internal and External Landscape

Audley L. Bell

Series: Security, Audit and Leadership Series

In times of rapid change, organizations are often forced to adjust their strategic plans. Stakeholders usually need assistance to effectively manage the risks, unprecedented at times, and capitalize on the opportunities that usually come with change. Change management must be effectively executed to assist in ensuring the viability of the organization. The book provides advice and guidance to assist stakeholders navigate the challenges and demands of change. It includes insights, measures, and tools that have contributed to my success as a leader in the internal audit profession for 27 years.

CRC Press
August 2024:314
Pb: 978-1-032-07537-2: **$59.95**
Hb: 978-1-032-07535-8: **$140**
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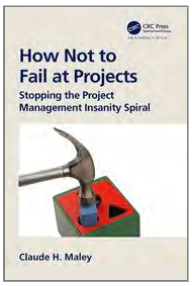
How Not to Fail at Projects

Stopping the Project Management Insanity Spiral



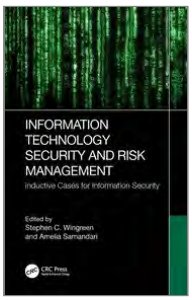
Claude H. Maley

They say you learn from your mistakes. They also say that repeating the same thing and expecting a different result is insanity. This book aims to analyze the reasons for failure in project management. It is filled with stories, anecdotes and satires that highlight how organizations and project managers fall into an "insanity spiral". It provides Sanity Checks designed to keep project managers from repeating the same mistakes and to help them become project champions.

Auerbach Publications
June 2024:84
Pb: 978-1-032-74450-6: **$34.95**
Hb: 978-1-032-74864-1: **$120**
eBook: 978-1-003-47169-1
* For **full contents** and more information, visit: **www.routledge.com/9781032744506**

Information Technology Security and Risk Management

Inductive Cases for Information Security



Edited by **Stephen C. Wingreen , Amelia Samandari**

Information Technology Security and Risk Management: Inductive Cases for Information Security is a compilation of cases that examine recent developments and issues that are relevant to IT security managers, risk assessment and management, and the broader topic of IT security in the 21st century.

CRC Press
May 2024:330
Pb: 978-1-032-20615-8: **$49.95**
Hb: 978-1-032-20614-1: **$140**
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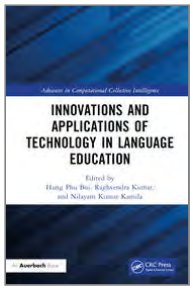
* For **full contents** and more information, visit: **www.routledge.com/9781032206158**

Innovations and Applications of Technology in Language Education



Edited by **Hung Phu Bui , Raghvendra Kumar , Nilayam Kumar Kamila**

Series: Advances in Computational Collective Intelligence

The linguistics and language education world has recently experienced a rapidly proliferating interest in applying technology. This interdisciplinary area is bridging the gap between two previously separate fields. This book contextualizes language education technology and examines how it is currently applied, discusses how it should be applied, and indicates future development. It focuses on the use of technology to improve language teaching and learning, the potential and concerns regarding technology-assisted language testing and assessment, and on using technology in English language education.

Auerbach Publications
July 2024:228
Hb: 978-1-032-56073-1: **$210**
eBook: 978-1-003-47391-6
* For **full contents** and more information, visit: **www.routledge.com/9781032560731**

Insecure Digital Frontiers

Navigating the Global Cybersecurity Landscape

Akashdeep Bhardwaj University of Petroleum and Energy Studies

'Insecure Digital Frontiers' is an immersive exploration into the tumultuous realm of cybersecurity, where the ever-expanding digital frontiers are both the battleground and the prize. From the shadows of cybercriminal exploits to the sophisticated dance of advanced persistence threats, this book delves into the vulnerabilities that define our interconnected world. With a panoramic lens, it navigates through the challenges and opportunities that shape the global cybersecurity landscape, offering readers a comprehensive understanding of the insecurities that permeate our digital existence.

CRC Press
October 2024:232
Pb: 978-1-032-84865-5: **$59.99**
Hb: 978-1-032-82342-3: **$140**
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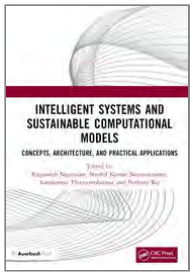
Intelligent Systems and Sustainable Computational Models

Concepts, Architecture, and Practical Applications



Edited by **Rajganesh Nagarajan , Senthil Kumar Narayanasamy , Ramkumar Thirunavukarasu , Pethuru Raj** IBM Pvt.Ltd., Manyata Tech Park, Bangolore, India

Intelligent Systems and Sustainable Computational Models: Concepts, Architecture, and Practical Applications explores this ensemble approach towards building a sustainable future. It explores novel solutions for such pressing problems as smart healthcare ecosystems, energy efficient distributed computing, affordable renewable resources, mitigating financial risks, monitoring environmental degradation, and balancing climate conditions. The book helps researchers to apply intelligent systems to computational sustainability models to propose efficient methods, techniques, and tools.

Auerbach Publications
June 2024:428
Hb: 978-1-032-52703-1: **$210**
eBook: 978-1-003-40795-9
* For **full contents** and more information, visit: **www.routledge.com/9781032527031**

Internet of Things Applications and Technology

Edited by **Faheem Syeed Masoodi , Alwi Bamhdi , Ankush Manocha , Tawseef Ahmed Teli , Zubair Masoodi , Faheem Ahmad Reegu**

The book provides a comprehensive examination of the integration of IoT technology into various industries and its impact on daily life, with a focus on the most recent advancements in the field. The technical aspects of IoT are thoroughly discussed, including the implementation of cutting-edge sensors, data communication protocols, and network topologies. The book also covers the latest advancements in areas such as edge computing, 5G networks, and AI-powered IoT devices. Emphasis is placed on the examination of IoT in real-world applications, including healthcare, agriculture, transportation, and home automation.

Auerbach Publications
August 2024:316
Hb: 978-1-032-59395-1: **$200**
* For **full contents** and more information, visit: **www.routledge.com/9781032593951**

Internet of Things Vulnerabilities and Recovery Strategies

Edited by **Fahim Masoodi , Alwi Bamhdi , Majid Ahmad Charoo , Zubair Masoodi , Arif Lattoo , Gousiya Hussain**

The book covers the prime requirements for a secure Internet of Things (IoT) setup. The book discusses security concerns of an IoT setup by uncovering the present challenges in standardization of data routing, data integrity, device supervision, IoT integration, information storage, IoT performance, and security solutions. The book further demonstrates the modelling of varied possible attacks on an IoT setup and possible recovery strategies.

Auerbach Publications
July 2024:360
Hb: 978-1-032-47331-4: **$210**
* For **full contents** and more information, visit: **www.routledge.com/9781032473314**

IoT Fundamentals with a Practical Approach

Neera Batra MM University, India**, Sonali Goyal**

"Introduction to IoT" is an insightful book that serves as a comprehensive guide to understanding the foundations and key concepts of the Internet of Things (IoT) technology. The book introduces readers to the concept of IoT, explains its significance and potential impact on various industries. It covers the underlying principles of IoT, including its architecture, connectivity, and communication protocols, providing readers with a solid understanding of how IoT systems are structured and how devices interact within the IoT ecosystem. This is an indispensable book that offers exploration of the essential principles of IoT.

CRC Press
August 2024:272
Pb: 978-1-032-30970-5: **$59.95**
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Ironwill 360° Leadership

Moving Forward: Unlock Twelve Emerging Trends for Forward Thinking Leaders

Douglas P. Pflug

Series: Security, Audit and Leadership Series

"Ironwill 360° Leadership: Moving Forward" by Douglas Pflug is a captivating journey into the future of leadership in 2025 and beyond, tailored for forward-thinking visionary leaders hungry for success.Prepare yourself for twelve game-changing trends, from mastering Digital Mindfulness to igniting Purpose-Driven Leadership. Pflug's insights on Remote Leadership Skills, Adaptive Learning, and Inclusive Leadership are your secret weapons for navigating today's dynamic world. Dive into Resilience, Ensuring Sustainability and Human-Centric Leadership to discover the roadmap to survive and thrive.

CRC Press
November 2024:200
Pb: 978-1-032-85422-9: **$59.99**
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Managing Customer Relationships Using Customer Care Techniques

Strategy Development of an International Enterprise

Anna Brzozowska Czestochowa University Of Technology, Poland**, Stanisław Brzeziński** Akademia Ekonomiczno-Humanistyczna, Poland**, Arnold Pabian** Czestochowa University of Technology**, Barbara Pabian** University of Economic in Katowice, Poland

In today's global business environment, Customer Relationship Management (CRM) has become the key to the success of many international enterprises. "Managing Customer Relationships Using Customer Care Techniques: Strategy Development of an International Enterprise" offers a comprehensive analysis of this crucial business aspect, focusing on how companies can effectively manage their customer relationships in the context of global expansion. This book stands out with its unique approach to CRM, blending theory with practice, providing readers with a deep understanding of how CRM influences the strategies of international enterprises.

CRC Press
May 2024:172
Pb: 978-1-032-71390-8: **$59.95**
Hb: 978-1-032-71388-5: **$140**
eBook: 978-1-032-71391-5
* For **full contents** and more information, visit: **www.routledge.com/9781032713908**

Leveraging the Potential of Artificial Intelligence in the Real World

Smart Cities and Healthcare

Edited by **Tien Anh Tran** Vietnam Maritime University, Haiphong, Vietnam**, Edeh Michael Onyema** Coal City university, Nigeria**, Arij Naser Abougreen** University of Tripoli, Libya

Comprising seven insightful chapters, this book offers a comprehensive overview of key topics shaping the future of healthcare system and smart cities. This book is a combination between the smart healthcare system and the intelligent transportation system based on the AI. From the telemedicine global accessibility to the application of data mining techniques in predicting cardiac diseases and detecting anti-malaria drug resistance, each chapter presents cutting-edge research and practical applications.

CRC Press
October 2024:184
Hb: 978-1-032-66748-5: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032667485**

ManusCrypt

Designed for Mankind – Anthropocentric Information Security

Prashant A Upadhyaya

Information Security primarily serves these six distinct purposes – Authentication, Authorization, Prevention of Data Theft, Sensitive Data Safety / Privacy, Data Protection / Integrity, Non-Repudiation. The entire gamut of infosec rests upon Cryptography. The author begins as a protagonist to explain that modern cryptography is more suited for machines rather than humans. This is explained through a brief history of ciphers and its evolution into cryptography and its various forms.

CRC Press
November 2024:200
Pb: 978-1-032-86364-1: **$59.99**
Hb: 978-1-032-84240-0: **$140**
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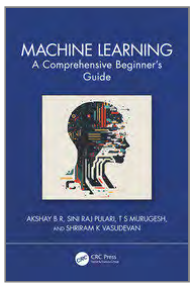
Machine Learning

A Comprehensive Beginner's Guide



Akshay B R , Sini Raj Pulari , T S Murugesh Govt. College of Engineering Srirangam, Tamil Nadu**, Shriram K Vasudevan** Intel India Pvt Ltd., Tamil Nadu

Machine learning is a dynamic and rapidly expanding field focused on creating algorithms that empower computers to recognize patterns, make predictions, and continually enhance performance. Dive into this fascinating field to master machine learning concepts with the step-by-step approach outlined in this book and contribute to its exciting future.

CRC Press
July 2024:258
Pb: 978-1-032-67666-1: **$59.95**
Hb: 978-1-032-67665-4: **$150**
eBook: 978-1-032-67668-5
* For **full contents** and more information, visit: **www.routledge.com/9781032676661**

Market and Technical Knowledge Integration in R&D Intensive Companies

Marcin Soniewicki

The book examines the role of market and technical knowledge integration in creating innovation as well as superior business performance of R&D intensive companies. R&D intensive enterprises require both market and technical knowledge resources, which are worth little by themselves. The book explains theoretical as well as practical information on market and technical knowledge integration. Providing a new approach to this topic, it considers current R&D intensive companies' ways of functioning based on qualitative and quantitative research and offers practical advice on improving market and technical knowledge integration in R&D intensive companies.

Routledge
November 2024:216
Hb: 978-1-032-63500-2: **$150**
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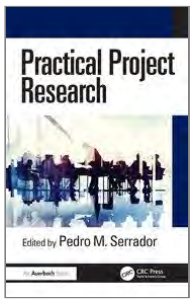
Mastering Project Leadership

Insights from the Research



Edited by **Pedro Serrador**

This is a collection of essays from key researchers in the field of project management who describe what they feel are the most impactful findings from research. In the challenging and competitive world of project management, project managers need all the insight they can get. Leading researchers share what they believe are the most important findings from the research being done today.

Auerbach Publications
August 2024:188
Pb: 978-1-032-47256-0: **$59.95**
Hb: 978-1-032-47332-1: **$150**
* For **full contents** and more information, visit: **www.routledge.com/9781032472560**

Mastering the Five Tiers of Audit Competency and Say What!? Communicate with Tact and Impact Set

Ann M. Butera

Series: Security, Audit and Leadership Series

Mastering the Five Tiers of Audit Competency: The Essence of Effective Auditing is an anthology of powerful risk-based auditing practices. Filled with practical do and don't techniques, it encompasses the interpersonal aspects of risk-based auditing, not just the technical content. Say What!? Communicate with Tact and Impact: What to Say to Get Results at Any Point in an Audit contains an array of practical and time-tested approaches that foster efficient and effective communication at any point during an engagement.

CRC Press
May 2024:407
Pb: 978-1-032-87761-7: **$77.99**
* For **full contents** and more information, visit: **www.routledge.com/9781032877617**

Medical Knowledge Paradigms for Enabling the Digital Health Ecosystem

Edited by **Usha Desai** SR University, India**, Vivek P Chavda , Ankit Vijayvargiya , Ravichander Janapati** SR University, India

In the era of digital transformation, the landscape of healthcare is undergoing a profound paradigm shift, driven by technological innovation and collaborative endeavors. The book "Medical Knowledge Paradigms for Enabling the Digital Health Ecosystems" delves into the dynamic interplay between technology and healthcare, exploring the transformative potential of digital solutions in shaping the future of healthcare delivery.

CRC Press
October 2024:344
Hb: 978-1-032-61193-8: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032611938**

Model-Driven Software Systems Development Using the Meta-Artifact Process

Wayne O'Brien

The book is concerned with software systems, specifically software code. It describes three major innovations for making software, which are combined with five widely used enabling technologies, to provide a complete, hypothesis-driven, software development process. Having complete requirements is essential for making good software and supports hypothesis-driven software development. The book explains ways to ensure that requirements are complete and correct and identifies likely points during development to form alternative hypotheses about them.

Auerbach Publications
April 2024:144
Pb: 978-1-032-58176-7: **$59.95**
Hb: 978-1-032-58121-7: **$180**
eBook: 978-1-003-44889-1
* For **full contents** and more information, visit: **www.routledge.com/9781032581767**

Networked Artificial Intelligence

AI-Enabled 5G Networking

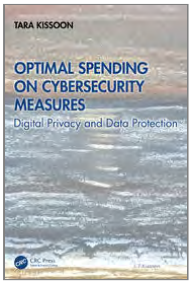
Radhika Ranjan Roy United States Army Research Laboratory, USA

With the advent of 5G wireless technologies, distributed AI is becoming immersive in all elements of the network (i.e., cloud, edge, and terminal devices), which makes AI virtually operate as a networking system. 5G technologies are enabling AI-based applications over the global network. This book provides a unified framework for the deep convergence of computing and communications, where the network and application/service can be jointly optimized as a single integrated system using AI. It presents a full treatment of 5G networked AI.

Auerbach Publications
October 2024:240
Pb: 978-1-032-81369-1: **$59.95**
Hb: 978-1-032-80389-0: **$150**
* For **full contents** and more information, visit: **www.routledge.com/9781032813691**

Optimal Spending on Cybersecurity Measures

Digital Privacy and Data Protection



Tara Kissoon

This book introduces the cyber risk investment model, and the cybersecurity risk management framework used within business driven risk assessments to meet the intent of Privacy and Data Protection Laws. This can be used by various stakeholders who are involved in the implementation of cybersecurity measures to safeguard sensitive data. This framework facilitates an organization's risk management decision-making process to demonstrate the mechanisms in place to fund cybersecurity measures to meet Privacy Laws, and demonstrates the application of the process using two case studies: CatchMyData and Rapid Cloud Migration.

CRC Press
September 2024:200
Pb: 978-1-032-80583-2: **$59.95**
Hb: 978-1-032-80247-3: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032805832**

Optimal Spending on Cybersecurity Measures

Protecting Health Information

Tara Kissoon

This book introduces the cyber risk investment model, and the cybersecurity risk management framework used within business-driven risk assessments to meet the intent of Privacy and Data Protection Laws. This can be used by various stakeholders who are involved in the implementation of cybersecurity measures to safeguard sensitive data. This framework facilitates an organization's risk management decision-making process to demonstrate the mechanisms in place to fund cybersecurity measures to meet Privacy Laws and demonstrates the application of the process showcasing six case studies.

CRC Press
October 2024:192
Pb: 978-1-032-86363-4: **$59.99**
Hb: 978-1-032-82357-7: **$140**
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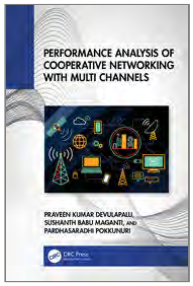
Performance Analysis of Cooperative Networking with Multi Channels



Praveen Kumar Devulapalli Vardhamam College of Engineering, Telangana**, Sushanth Babu Maganti** Matrusri Engineering College, India**, Pardhasaradhi Pokkunuri** Koneru Lakshmaiah Education Foundation, India

This book will be the reference book under wireless cooperative communication and Advanced communication techniques for the research scholars and Post Graduate students who are working on Cooperative Communication. The book's distinctive features. This book will be the reference book for cooperative communication Presents cooperative routing algorithms for large scale cooperative networks with the constraint of throughput and transmission time Presents energy efficient transmission approach by make use of multiple radio terminals

CRC Press
July 2024:122
Hb: 978-1-032-71397-7: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032713977**

Preparing Healthcare Workers for an AI-Driven Workplace

Anthony Matthew Hopper Consultant, Henrico, Virginia, USA

Trainers, healthcare leaders, and practitioners at all levels can use the information in this book to help them teach students to succeed in the complex, fluid healthcare field. These professionals will discover the core traits that make-up analytical thinking and technology-related behaviors. They will learn how best to train students to develop these skills—as they relate to the workplace. Healthcare administrators will further see how they can amend current practices to help employees become better at analytics and strategical thinking. Finally, healthcare leaders will learn how to convey information to a wide array of stakeholders.

Auerbach Publications
June 2024:162
Pb: 978-1-032-00807-3: **$39.95**
Hb: 978-1-032-59390-6: **$150**
eBook: 978-1-003-17584-1
* For **full contents** and more information, visit: **www.routledge.com/9781032008073**

3RD EDITION

Project Management for Healthcare

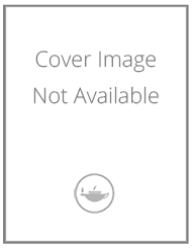
David Shirley

The book explores the discipline of project management from the perspective of the healthcare environment. The Third Edition features changes related to the PMBOK® Guide, 7th Edition and emphasizes tailoring, performance domains, and value delivery systems, all from the perspective of the healthcare field.

CRC Press
June 2024:290
Pb: 978-1-032-54847-0: **$59.95**
Hb: 978-1-032-54846-3: **$150**
eBook: 978-1-003-42775-9
* For **full contents** and more information, visit: **www.routledge.com/9781032548470**

Propaganda

From Disinformation and Influence to Operations and Information Warfare



Lukasz Olejnik

The book is a modern primer on propaganda. Disinformation, trolls, bots, information influence, psychological operations, information operations and information warfare. PROPAGANDA offers a contemporary model for thinking about the subject. It puts them in their proper place. The book explains the origins of the meaning and phenomenon of propaganda. Where it came from and how it has changed over the centuries. The book covers modern methods, including AI or advertising technologies. Legal, political, diplomatic and military considerations ensure that the material is covered in depth.

CRC Press
October 2024:272
Pb: 978-1-032-81372-1: **$59.95**
Hb: 978-1-032-80225-1: **$140**
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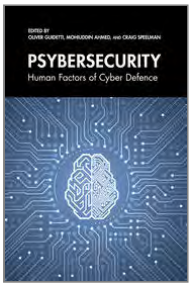
Psybersecurity

Human Factors of Cyber Defence



Edited by **Oliver Guidetti** Edith Cowan University School of Arts and Humanities, Australia**, Mohiuddin Ahmed , Craig Speelman**

Psybersecurity: Human Factors of Cyber Defence is a clarion call to action in the face of a stark reality: over 90% of cyber attacks exploit human vulnerabilities, as highlighted by the 2022 Global Risks Report from the World Economic Forum. This gap between the rapid advancement of cyber security technologies and the slower pace of development in human-centric defences poses a formidable challenge to national security and personal safety. Amidst the dazzling progress of AI technologies like ChatGPT and Microsoft Security Co-Pilot, the human element of cyber security remains critically underdeveloped.

CRC Press
September 2024:288
Hb: 978-1-032-66483-5: **$110**
* For **full contents** and more information, visit: **www.routledge.com/9781032664835**

Psychology of Agile

Exploring the Human Element at Work

Bhuvan Unhelkar University of South Florida

Agile is a mindset and a culture that has evolved beyond software development to encompass all forms of project management, business organizations, defense, and society. In today's fast-paced and ever-changing world, adopting an Agile approach is essential for organizations to thrive and maintain competitiveness. This book aims to extend the concept of Agility beyond the four declarations of the Manifesto and apply it to various projects, organizations, and even society. The book delves into the intricacies of Agile and highlights its significance in modern workplaces. It emphasizes that Agile is more than just a set of tools and techniques.

CRC Press
November 2024:192
Pb: 978-1-032-06284-6: **$59.99**
Hb: 978-1-032-06283-9: **$140**
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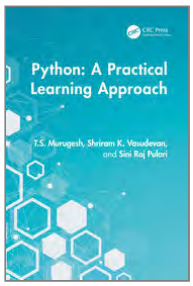
Python

A Practical Learning Approach



T.S. Murugesh Govt. College of Engineering Srirangam, Tamil Nadu**, Shriram K. Vasudevan** Intel India Pvt Ltd., Tamil Nadu**, Sini Raj Pulari**

Python's simplicity and versatility make it an ideal language for both beginners and experienced programmers. Its syntax facilitates a smooth learning curve, enabling individuals to concentrate on grasping programming concepts instead of wrestling with intricate syntax rules. The book, "Python - A Practical Learning Approach," exemplifies Python's simplicity and versatility with numerous examples, ensuring a seamless learning journey. Beyond theory, the language's practicality allows learners to actively apply their knowledge in real-world scenarios, establishing Python as an asset in education.

CRC Press
August 2024:184
Pb: 978-1-032-71266-6: **$59.95**
Hb: 978-1-032-71264-2: **$140**
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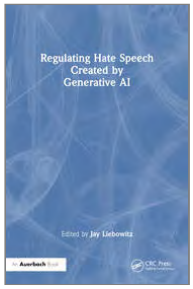
Regulating Hate Speech Created by Generative AI



Edited by **Jay Liebowitz** Harrisburg University of Science and Technology, Pennsylvania, USA

Generative AI systems, such as Chat-GPT and Bard, pose a threat to countering hate and misinformation online. For example, The Center for Countering Digital conducted a test of Bard, which often generated answers denying the Holocaust. This book examines ways to regulate generative AI to reduce online hate and secure justice in a digital environment. Featuring research and offering practical guidelines, the book presents tangible guidelines for regulating generative AI models so they do not contribute to online hate disinformation and imagery.

Auerbach Publications
August 2024:190
Pb: 978-1-032-64434-9: **$59.95**
Hb: 978-1-032-64817-0: **$150**
* For **full contents** and more information, visit: **www.routledge.com/9781032644349**

Reliable and Intelligent Optimization in Multi-Layered Cloud Computing Architectures

Edited by **Madhusudhan H. S.** Vidyavardhaka College of Engineering, India**, Satish Kumar T , Punit Gupta , Dinesh Kumar Saini , Kashif Zia**

The book examines virtual machine placement techniques and task scheduling techniques that optimize resource utilization and minimize energy consumption of the cloud datacenter. Placement techniques provide an optimal solution to the optimization problem using multiple objectives. The book also focuses on basic design principles and analysis of virtual machine placement techniques and tasks allocation techniques. The virtual machine placement techniques are also used for quality-of-service (qoS) improvement of the service-oriented architecture-supported computing paradigm.

Auerbach Publications
May 2024:224
Pb: 978-1-032-55996-4: **$69.95**
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eBook: 978-1-003-43329-3
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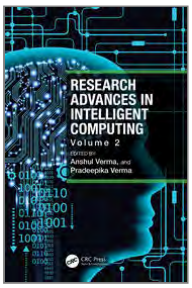
Research Advances in Intelligent Computing

Volume 2



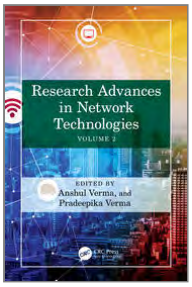
Edited by **Anshul Verma** Banaras Hindu University, India**, Pradeepika Verma** IIT (BHU), India

As the computers and other machines have been developed, researchers and scientists have worked very hard to increase their capacity to carry out a variety of jobs. Thus, computers' capabilities in terms of varied working areas, adaptable duties, processing speed, and smaller size are all increasing exponentially every day. We are currently competing to develop machines or computers that are as intelligent as people. Making a computer or piece of software think like a smart human being is what artificial intelligence (AI) is all about. AI is influenced by the study of the human brain, namely how people make decisions, learn, and respond when attempting to solve any problems.

CRC Press
August 2024:312
Hb: 978-1-032-56116-5: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032561165**

Research Advances in Network Technologies

Volume 2



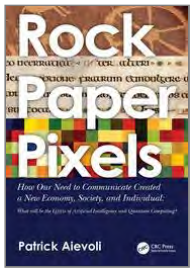
Edited by **Anshul Verma** Banaras Hindu University, India**, Pradeepika Verma** IIT (BHU), India

In the present technological age, information is a valuable resource for both small and large enterprises as well as for our daily lives. The key enablers that link the computer resources and devices together to gather, process, and distribute the crucial data both locally and worldwide are network technologies. For our daily lives and commercial operations, network technologies offer effective, adaptable, and seamless communication while maximizing productivity and resources.This book will present the most recent and leading research work in the field of network technologies in order to achieve solutions for various problems exist in this domain.

CRC Press
August 2024:328
Hb: 978-1-032-56119-6: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032561196**

Rock • Paper • Pixels

How Our Need to Communicate Created a New Economy, Society, and Individual: What will be the Effects of Artificial Intelligence and Quantum Computing?



Patrick Aievoli

The purpose of this book was to avail students of the many different reasons and back-stories equated with the advent of interaction design and its effect on our world. Since the beginning of recorded history mankind has desired to keep track of its events and accomplishments and to find a way to properly represent those occurrences to the rest of the world. Now with the use of interaction design and multimedia it has become possible to present the story through a current and evocative platform. The main goal of this book is to help you take your first steps in that new direction. To understand the effects of this new platform and to be wary of its abilities and its dangers.

CRC Press
September 2024:304
Pb: 978-1-032-51892-3: **$59.95**
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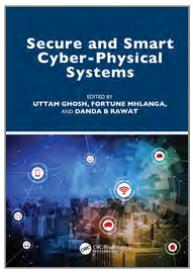
Secure and Smart Cyber-Physical Systems



Edited by **Uttam Ghosh** Meharry Medical College, USA**., Fortune Mhlanga , Danda B Rawat**

Cybersecurity is a paramount concern in both Internet of Things (IoT) and Cyber-Physical Systems (CPS) due to the interconnected and often critical nature of these systems. The integration of AI/ML into the realm of IoT and CPS security has gained significant attention and momentum in recent years. The success of AI/ML in various domains has sparked interest in leveraging these technologies to enhance the security, resilience, and adaptability of IoT and CPS. Secure and Smart Cyber-Physical Systems provides an extensive exploration of AI/ML-based security applications in the context of IoT and CPS.

CRC Press
July 2024:260
Hb: 978-1-032-45382-8: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032453828**

Secure Health

A Guide to Cybersecurity for Healthcare Managers

Edited by **Mohamed Hammad** Prince Sultan University, Saudi Arabia**, Gauhar Ali** Prince Sultan University, Saudi Arabia**, Mohammed A. El-Affendi** Prince Sultan University, Rafha Street, 11586, Riyadh**, Yassine Maleh** Sultan Moulay Slimane University, Morocco**, Ahmed A. Abd El-Latif**

In today's interconnected world, healthcare systems are increasingly turning to digital technologies to enhance patient care and optimize operations. However, this digital transformation presents significant challenges in guaranteeing the security and privacy of sensitive healthcare data. "Secure Health confronts these challenges head-on, offering a comprehensive exploration of the latest advancements and best practices in securing digital health systems.

CRC Press
November 2024:288
Hb: 978-1-032-74265-6: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032742656**

Smart Global Value Chain

Future Innovations

Edited by **Adarsh Garg , Amrita Jain** GL Bajaj Institute of Management & Research, India**, Manisha Singh** G.L.Bajaj Institute of Management and Research, India**, Fadi Al-Turjman** Near East University, Turkey

This book is an essential guide for academics, industry leaders, policy makers to navigate the future where smart technologies like artificial intelligence, machine learning, blockchain, IoT and beyond reshape the global economic landscape.

CRC Press
August 2024:328
Hb: 978-1-032-60992-8: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032609928**

Social Engineering in Cybersecurity

Threats and Defenses

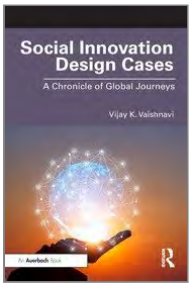
Edited by **Gururaj H L** Manipal Institute of Technology, India**, Janhavi V** Vidyavardhaka College of Engg, Karnataka**, Ambika V** Vidyavardhaka College of Engg, Karnataka

This comprehensive textbook on social engineering attacks provides a deep and practical exploration of this increasingly prevalent threat in cybersecurity. It covers a wide array of attack vectors, including phishing, vishing, pretexting, and more, offering readers an in-depth understanding of how these attacks work. The book delves into the psychology behind social engineering, examining the cognitive biases and emotional triggers that make individuals susceptible.

CRC Press
June 2024:240
Hb: 978-1-032-52440-5: **$140**
eBook: 978-1-003-40671-6
* For **full contents** and more information, visit: **www.routledge.com/9781032524405**

Social Innovation Design Cases

A Chronicle of Global Journeys



Vijay K. Vaishnavi Georgia State University

The book focuses on how social innovations and associated social enterprises are or can be created. It uses a social innovation design process model that has been adapted from design science research process and is influenced by design thinking. The process model provides a general template for designing a social innovation and corresponding social enterprises. It chronicles the design journeys of 20 global social innovation design cases. In each case a detailed description of how social innovation has been designed is provided.

Routledge
August 2024:322
Pb: 978-1-032-75525-0: **$59.95**
Hb: 978-1-032-76465-8: **$150**
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Soft Computing in Renewable Energy Technologies

Edited by **Najib El Ouanjli , Mahmoud A. Mossa** Minia University, Egypt**, Mariya Ouaissa , Sanjeevikumar Padmanaban** University of South-Eastern Norway**, Said Mahfoud**

This book addresses and disseminates state-of-the-art research and development in the applications of soft computing techniques for renewable energy systems. It covers topics such as solar energy, wind energy, solar concentrator technologies as well as building systems and power generation systems. In all these areas applications of soft computing methods such as artificial neural networks, genetic algorithms, particle swarm optimization, cuckoo search, fuzzy logic and a combination of the above, called hybrid systems, are included. This book is a source for students interested in the fields of renewable energy and application of the soft computing.

CRC Press
October 2024:256
Hb: 978-1-032-61191-4: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032611914**

Software Project Management

Methods and Techniques

Lawrence J. Peters

The management of a software project has been shown to be the number one factor in determining a project's success. It has been found that 53% of software projects failures are due to poor management. Not surprisingly, most software development managers have not been trained in project management. This book remedies this situation in two ways: familiarizing readers with the elements of the discipline and providing fact-based resources on practicing software project management. The book presents facts and data to refute many widely held mistaken beliefs about software projects. The book is intended for both students and software project managers.

Auerbach Publications
June 2024:244
Pb: 978-1-032-43057-7: **$54.95**
Hb: 978-1-032-77413-8: **$150**
eBook: 978-1-003-48428-8
* For **full contents** and more information, visit: **www.routledge.com/9781032430577**

Spies in the Bits and Bytes

The Art of Cyber Threat Intelligence

Atif Ali , Baber Majid Bhatti

For anyone interested in learning about the complexities of cybersecurity and its vital role in our globalized society, this book is an indispensable resource.In order to prepare its audience for the ongoing fight against digital adversaries, "Spies in the Bits and Bytes" serves as a thorough guide to the issues and solutions in the field of cyber threat intelligence. This audience includes cybersecurity professionals, IT students, corporate leaders, policy makers, and general readers with an interest in the digital world.

CRC Press
October 2024:304
Pb: 978-1-032-82362-1: **$59.99**
Hb: 978-1-032-82109-2: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032823621**

The Art of Cyber Defense

From Risk Assessment to Threat Intelligence

Edited by **Youssef Baddi , Mohammed Amin Almaiah , Omar Almomani , Yassine Maleh** Sultan Moulay Slimane University, Morocco

The Art of Cyber Defense: From Risk Assessment to Threat Intelligence offers a comprehensive exploration of cybersecurity principles, strategies, and technologies essential for safeguarding digital assets and mitigating evolving cyber threats. This book provides invaluable insights into the intricacies of cyber defense, guiding readers through a journey from understanding risk assessment methodologies to leveraging threat intelligence for proactive defense measures. Delving into the nuances of modern cyber threats, the book equips readers with the knowledge and tools necessary to navigate the complex landscape of cybersecurity.

CRC Press
September 2024:304
Hb: 978-1-032-71478-3: **$140**
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The CISO Playbook

Andres Andreu

Series: Security, Audit and Leadership Series

The CISO Playbook aims to provide nothing but real world advice and perspectives to both up and coming cybersecurity leaders as well existing ones looking to grow. The book does not approach cybersecurity leadership from the perspective of the academic, or what it should be, but more from that which it really is. Moreover, it focuses on the many things a cybersecurity leader needs to "be" given that the role is dynamic and ever-evolving, requiring a high level of adaptability.

CRC Press
November 2024:280
Pb: 978-1-032-76207-4: **$59.99**
Hb: 978-1-032-75796-4: **$140**
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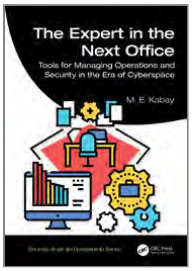
The Expert in the Next Office

Tools for Managing Operations and Security in the Era of Cyberspace



M. E. Kabay

Series: Security, Audit and Leadership Series

As organizations increasingly depend on electronic information, the lack of systematic training on effective operations and security principles is causing chaos. Stories of data loss, data corruption, fraud, interruptions of service and poor system design continue to flood our news. This book reviews fundamental concepts and practical recommendations for operations and security managers and staff. The guidelines are based on the author's 40 years of experience in these areas. The text is written in simple English with references for all factual assertions so that readers can explore topics in greater detail.

CRC Press
July 2024:438
Hb: 978-1-032-40736-4: **$89.95**
* For **full contents** and more information, visit: **www.routledge.com/9781032407364**

The Hack Is Back

Techniques to Beat Hackers at Their Own Games

Jesse Varsalone , Christopher Haller

Have you wondered how hackers and nation states gain access to confidential information and the most secure environments in the world? Where did they learn these techniques and how do they refine them to achieve these objectives? How do I get started in a career in cyber and get hired? We will discuss and provide examples of some of the nefarious techniques used by hackers and cover how attackers apply these methods in a practical manner. The Hack is Back is tailored for both beginners and aspiring cybersecurity professionals to learn these techniques to evaluate and find risks on computer systems and networks.

CRC Press
August 2024:312
Pb: 978-1-032-81853-5: **$59.95**
Hb: 978-0-815-38238-6: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032818535**

The Next Generation Innovation in IoT and Cloud Computing with Applications

Edited by **Abid Hussain** Career Point University, India**, Ahmed J Obaid** University of Kufa, Iraq**, Garima Tyagi** Career Point University, India**, Amit Sharma** Career Point University, India

"The Next Generation Innovation in IoT and Cloud Computing with Its Applications" is a thought-provoking edited book that explores the cutting-edge advancements and transformative potential of the Internet of Things (IoT) and cloud computing. This comprehensive volume brings together leading experts and researchers to delve into the latest developments, emerging trends, and practical applications that define the next era of technological innovation. Readers will gain valuable insights into how IoT and cloud computing synergize to create a dynamic ecosystem, fostering unprecedented connectivity and efficiency across various industries.

CRC Press
September 2024:216
Hb: 978-1-032-52445-0: **$140**
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The Security Leader's Communication Playbook and Leading the Digital Workforce Set

Jeffrey W. Brown

Series: Security, Audit and Leadership Series

This book examines the multitude of communication challenges that CISOs are faced with every day and provides practical tools to identify your audience, tailor your message and master the art of communicating. Future IT leaders won't be technology leaders, they'll be business leaders who understand technology. Leading the Digital Workforce takes a fresh look at technology leadership, exploring how to lead and manage in today's digital workplace where the pace of change is exponential.

CRC Press
May 2024:614
Hb: 978-1-032-87408-1: **$150**
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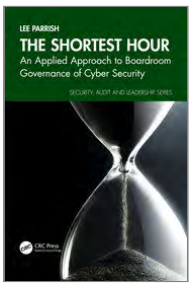
The Shortest Hour

An Applied Approach to Boardroom Governance of Cyber Security



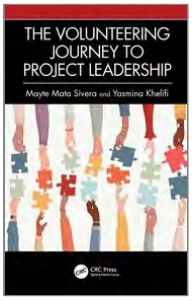
Lee Parrish Lee Parrish Ventures, USA

Series: Security, Audit and Leadership Series

An award-winning Chief Information Security Officer with over two decades of working with multiple Fortune 500 boards, Lee Parrish provides an example-laden vision to improve cybersecurity governance in the boardroom. Additionally, Lee deciphers the technical jargon to increase the reader's cyber fluency – not to make you a cyber expert, but to be able to ask direct questions, understand the answers provided, challenge strategies, and advise on important cyber decisions. Pick up your copy of The Shortest Hour: An Applied Approach to Boardroom Cybersecurity Governance today and start your journey on achieving more effective cybersecurity oversight.

CRC Press
July 2024:184
Pb: 978-1-032-76163-3: **$59.95**
Hb: 978-1-032-75794-0: **$140**
* For **full contents** and more information, visit: **www.routledge.com/9781032761633**

The Volunteering Journey to Project Leadership



Mayte Mata Sivera , Yasmina Khelifi

Project managers can gain transferable skills for work by volunteering. This book explains how volunteering can help project managers hone their leadership skills. The Covid outbreak has shown the importance of human relationships, and not just at work. Having a supportive network of people can help move forward a career, and volunteering is a practical way to build such a network. Leadership skills are mastered by practicing, and by experimenting, and volunteering provides great opportunities to do this. Sharing lessons learned in their own personal leadership journey, the authors provide practical steps to prepare project managers for their own volunteering journey to leadership.

Auerbach Publications
September 2024:120
Pb: 978-1-032-52149-7: **$29.95**
Hb: 978-1-032-52150-3: **$150**
* For **full contents** and more information, visit: **www.routledge.com/9781032521497**

The Zero Trust Framework and Privileged Access Management (PAM)

Ravindra Das

This book is about the Zero Trust Framework. Essentially, this is a methodology where an IT/Network Infrastructure of a business is segmented into smaller islands, each having their own lines of defenses. This is primarily achieved through the use of Multifactor Factor (MFA) authentication, where at least three more authentication layers are used, preferably being different from one another. It is hoped that by combining the Zero Trust Framework along with PAM, the use of passwords can be eradicated all together, thus giving rise to the "Passwordless Society".

CRC Press
May 2024:125
Pb: 978-1-032-74600-5: **$37.95**
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Ubiquitous and Transparent Security

Challenges and Applications

Edited by **A. Suresh Kumar** Graphic Era Deemed to be University, India**, Rajesh Kumar Dhanaraj , Yassine Maleh** Sultan Moulay Slimane University, Morocco**, Daniel Arockiam** Galgotias University, India

Series: Advances in Cybersecurity Management

In an increasingly interconnected digital realm, "Ubiquitous and Transparent Security: Challenges and Applications" emerges as a guiding beacon through the intricate web of modern cybersecurity. This comprehensive tome meticulously dissects the multifaceted challenges faced in safeguarding our digital infrastructure. From the omnipresence of threats to the evolving landscape of vulnerabilities, this book navigates the complexities with a keen eye, offering a panoramic view of the security terrain.

CRC Press
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Web 3.0

The Next Generation's Internet and Understanding the Concept of the Metaverse

Edited by **Prabhat Kumar Srivastav** IMS Eng. College, Ghaziabad**, Prateek Singhal** GLA University, Mathura**, Basudeo Singh Roohani** IMS Engineering College**, Nitin Sharma**

The book underscores AI's transformative impact on reshaping physical, digital, and biological boundaries, converging with technologies like robotics, IoT, 3D printing, genetic engineering, and quantum computing—termed Web 3.0 Industrial Revolution. The book's main goals include providing a collaborative platform for academia and industry researchers to share contributions and shape the future through knowledge exchange. Recognizing recent progress driven by increased computing power, it highlights the positive impact of digital technology—AI, IoT, AR/VR, Additive Manufacturing, CPS, cloud computing, and robotics—on industrial efficiency and quality.

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Web Hacking Arsenal

A Practical Guide to Modern Web Pentesting

Rafay Baloch

The core of this book is its ability to adapt to the evolving nature of web security threats. It prepares the reader not just for the challenges of today but also for the unforeseen complexities of the future. This proactive approach ensures the book's relevance over time, empowering readers to stay ahead in the ever-changing cybersecurity landscape. In the digital age, where web applications form the crux of our interconnected existence, this book emerges as an essential guide to mastering the art and science of web application pentesting.

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Zero to Hero

Your Guide to a Career in Cybersecurity

Felix Kyei Asare

"Zero to Hero: Your Guide to a Career in Cybersecurity" is an essential roadmap for anyone aiming to penetrate the vibrant and ever-expanding domain of cybersecurity. In an era where digital threats loom larger and more complex than ever, this book stands as a beacon of clarity and practical wisdom. Tailored to empower novices with no prior knowledge, as well as those with basic understanding seeking to solidify their footing in cybersecurity, it sets itself apart with a laser focus on real-world applicability, ensuring readers not only grasp theoretical concepts but are also primed to implement them effectively.

CRC Press
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A Comprehensive Guide to Coding and Programming in Stata

Rafael Gafoor University College London, U.K.

This book is an introductory guide to programming and coding in Stata. Commonly encountered code in the field of medical statistics as well as the analyses of observational data are presented. For those who are involved in the analyses of observational studies, the need to sometimes assemble large datasets will necessitate a detailed understanding of loops and macros. This book covers these materials early on and then describes other commonly required coding commands. The focus on coding allows beginners to grasp the basics of coding and programming, as well as allowing established researchers to hone their skills and become more advanced programmers.

Chapman & Hall
July 2024:176
Pb: 978-1-032-77565-4: **$82.99**
Hb: 978-1-032-77485-5: **$200**
eBook: 978-1-003-48377-9
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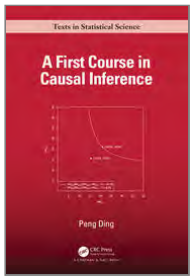
A First Course in Causal Inference



Peng Ding University of California Berkeley, U.S.A

Series: Chapman & Hall/CRC Texts in Statistical Science

This textbook, based on the author's course on causal inference at UC Berkeley taught over the past seven years, only requires basic knowledge of probability theory, statistical inference, and linear and logistic regressions. It assumes minimal knowledge of causal inference, and reviews basic probability and statistics in the appendix. It covers causal inference from a statistical perspective and includes examples and applications from biostatistics and econometrics. This book is suitable for an advanced undergraduate or graduate-level course on causal inference, or postgraduate and PhD-level course in statistics and biostatistics departments.

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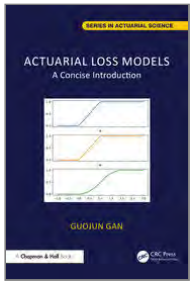
Actuarial Loss Models

A Concise Introduction



Guojun Gan University of Connecticut, U.S.A

Series: Chapman & Hall/CRC Series in Actuarial Science

This book covers part of the learning outcomes of the Fundamentals of Actuarial Mathematics (FAM) exam and the Advanced Short-Term Actuarial Mathematics (ASTAM) exam administered by the Society of Actuaries. It can be used by actuarial students and practitioners who prepare for the aforementioned actuarial exams. This is a concise textbook written for undergraduate students majoring in actuarial science who wish to learn the basics of actuarial loss models. This book can be used as a textbook for a one-semester course on actuarial loss models. The prerequisite for this book is a first course on calculus. The reader is supposed to be familiar with differentiation and integration.

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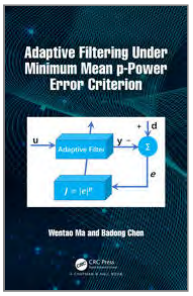
Adaptive Filtering Under Minimum Mean p-Power Error Criterion



Wentao Ma Xi'an University, China**, Badong Chen** Xi'an University, China

Adaptive filtering still receives attention in engineering as the use of the adaptive filter provides improved performance over the use of a fixed filter under the time varying and unknown statistics environments. This book aims to provide a comprehensive introduction of the MMPE and related adaptive filtering algorithms, which will become an important reference for researchers and practitioners in this application area. The book is geared to senior undergraduates with a basic understanding of linear algebra and statistics, graduate students, or practitioners with experience in adaptive signal processing.

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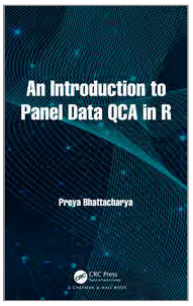
An Introduction to Panel Data QCA in R



Preya Bhattacharya Xavier University of Louisiana, U.S.A

This book discusses and compares four different approaches towards analyzing panel data in QCA. It starts by introducing QCA as a research approach, then discusses the most important assumptions, and steps like set-calibration and theory-testing, and finally demonstrates each of the four panel data approaches, in separate chapters. Finally, it compares the strengths and weaknesses of each of these models and suggests scenarios where researchers can apply it. This book is supplemented by online RStudio materials, like datasets, codes, and Markdown documents for each chapter, and can be used as a textbook for introductory and advanced courses on panel-data QCA.

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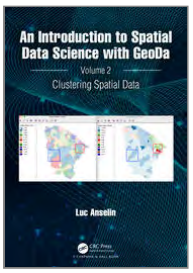
An Introduction to Spatial Data Science with GeoDa

Volume 2: Clustering Spatial Data



Luc Anselin University of Chicago

This book is the second in a two-volume series that introduces the field of spatial data science. It moves beyond pure data exploration to the organization of observations into meaningful groups, i.e., spatial clustering. This constitutes an important component of so-called unsupervised learning, a major aspect of modern machine learning. The book is intended for readers interested in going beyond simple mapping of geographical data to gain insight into interesting patterns as expressed in spatial clusters of observations. Familiarity with the material in Volume 1 is assumed, especially the analysis of local spatial autocorrelation and the full range of visualization methods.

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An Introduction to Spatial Data Science with GeoDa

Volume 1 and 2

Luc Anselin University of Chicago

This book is the first in a two-volume series that introduces the field of spatial data science. It offers an accessible overview of the methodology of exploratory spatial data analysis. The focus of the book is on intuitive methods to discover interesting patterns in spatial data. It offers a progression from basic data manipulation through description and exploration, to the identification of clusters and outliers by means of local spatial autocorrelation analysis. This book is the second in a two-volume series that introduces the field of spatial data science. The book is intended for readers interested in going beyond simple mapping of geographical data.

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Applied Microbiome Statistics

Correlation, Association, Interaction and Composition

Yinglin Xia , Jun Sun

Series: Chapman & Hall/CRC Biostatistics Series

This unique book officially defines Microbiome Statistics as a specific new field of statistics, and addresses the statistical analysis of correlation, association, interaction and composition in microbiome research. It also defines microbiome as a hypothesis-driven experimental science, describes two microbiome research themes and six unique characteristics of microbiome data, as well as investigates challenges for statistical analysis of microbiome data using the standard statistical methods. This book is useful for researchers of biostatistics, ecology, and data analysts.

Chapman & Hall
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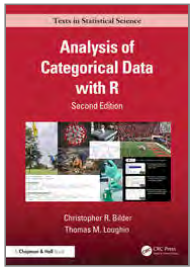
2ND EDITION

Analysis of Categorical Data with R



Christopher R. Bilder University of Nebraska–Lincoln, USA**, Thomas M. Loughin** Simon Fraser University, Surrey, British Columbia, Canada

Series: Chapman & Hall/CRC Texts in Statistical Science

The second edition is a substantial update of the first based on the authors' experience of teaching from the book for nearly a decade. The book is organized as before, but with new content throughout, and there are two new substantive topics in the advanced topics chapter – group testing and splines. The computing has been completely updated, with the emmeans [CB1] package now integrated into the book.

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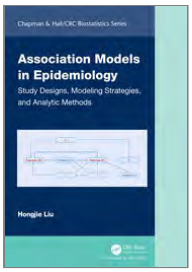
Association Models in Epidemiology

Study Designs, Modeling Strategies, and Analytic Methods



Hongjie Liu University of Maryland, USA

Series: Chapman & Hall/CRC Biostatistics Series

Provides detailed strategies in modeling analyses of epidemiologic data. Focuses on integrating epidemiologic principles with statistical modeling methods in such a way that the principles inform the choice of modeling strategy and covariate selection.

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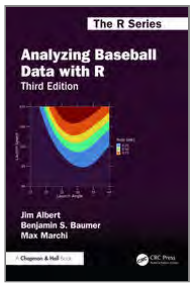
3RD EDITION

Analyzing Baseball Data with R



Jim Albert , Benjamin S. Baumer Smith College, Northhampton, MA**, Max Marchi**

Series: Chapman & Hall/CRC The R Series

Analyzing Baseball Data with R Third Edition introduces R to sabermetricians, baseball enthusiasts, and students interested in exploring the richness of baseball data. It equips you with the necessary skills and software tools to perform all the analysis steps, from importing the data to transforming them into an appropriate format to visualizing the data via graphs to performing a statistical analysis. New to the third edition is revised R code to make use of new functions made available through the tidyverse. The third edition introduces three chapters of new material, focusing on communicating results via presentations using the Quarto publishing system.

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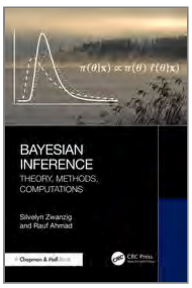
Bayesian Inference

Theory, Methods, Computations



Silvelyn Zwanzig Uppsala University, Sweden**, Rauf Ahmad**

Bayesian Inference: Theory, Methods, Computations provides a comprehensive coverage of the fundamentals of Bayesian inference from all important perspectives, namely theory, methods and computations. The book is primarily aimed at first or second semester master students, where parts of the book can also be used at Ph.D. level or by research community at large. The emphasis is on exact cases. However, to gain further insight into the core concepts, an entire chapter is dedicated to computer intensive techniques. Selected chapters and sections of the book can be used for a one-semester course on Bayesian statistics.

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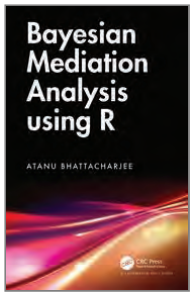
Bayesian Mediation Analysis using R



Atanu Bhattacharjee University of Leicester, UK

Focused on various forms of time-to-event data methodologies, this book helps readers master the application of Bayesian mediation analysis using R. Across ten chapters, this book explores concepts of mediation analysis, survival analysis, accelerated failure time modeling, longitudinal data analysis, and competing risk modeling. Each chapter progressively unravels intricate topics, from the foundations of Bayesian approaches to advanced techniques like variable selection, bivariate survival models, and Dirichlet process priors.

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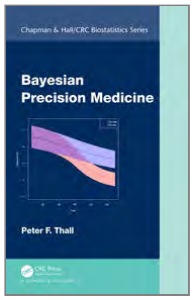
Bayesian Precision Medicine



Peter F. Thall M.D. Anderson Cancer Center, Houston, Texas, USA

Series: Chapman & Hall/CRC Biostatistics Series

Presents modern Bayesian statistical models and methods for identifying treatments tailored to individual patients using their prognostic variables and predictive biomarkers. The process of evaluating and comparing treatments is explained and illustrated by practical examples, followed by a discussion of causal analysis and its relationship to statistical inference.

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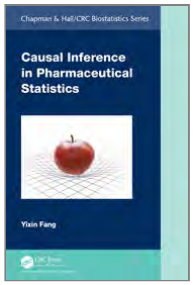
Causal Inference in Pharmaceutical Statistics



Yixin Fang AbbVie, Chicago, USA

Series: Chapman & Hall/CRC Biostatistics Series

Causal Inference in Pharmaceutical Statistics introduces the basic concepts and fundamental methods of causal inference relevant to pharmaceutical statistics. This book covers causal thinking for different types of commonly used study designs in the pharmaceutical industry, including randomized controlled clinical trials, longitudinal studies, single-arm clinical trials with external controls, and real-world evidence studies. The book is intended for clinical statisticians and epidemiologists working in the pharmaceutical industry, and is useful to graduate students in statistics, biostatistics, and data science looking to pursue a career in the pharmaceutical industry.

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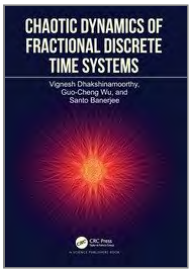
Chaotic Dynamics of Fractional Discrete Time Systems



Vignesh Dhakshinamoorthy Kalasalingam Aca of Res and Edu, India**, Guo-Cheng Wu** Neijiang Normal University, China**, Santo Banerjee** University Putra Malaysia

The book reviews the application of discrete fractional operators to biological, chemical reaction and chaotic system with applications in physics.

CRC Press
September 2024:188
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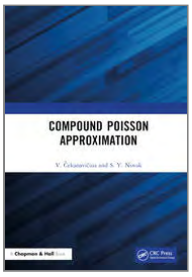
Compound Poisson Approximation



V. Čekanavičius , S. Y. Novak

Compound Poisson Approximation appears naturally in situations where one deals with a large number of rare events. It has important applications in insurance, extreme value theory, reliability theory, mathematical biology, etc. This book synthesizes the most important recent research in the field in a single volume. The book is of interest to researchers and postgraduate students from probability, statistics, and mathematics.

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Data Driven Mathematical Modeling in Agriculture

Tools and Technologies

Edited by **Sabyasachi Pramanik , Sandip Roy , Rajesh Bose**

Series: River Publishers Series in Mathematical, Statistical and Computational Modelling for Engineering

To identify the variables affecting farmers' choices to embrace more precise technology, zero-inflated Poisson and negative binomial count data regression models are utilized. Outcomes from the count data analysis of a random sample of various farm operators show that various aspects, including farm dimension, farmer demographics, soil texture, urban impacts, farmer position of liabilities, and position of the farm in a state, were significantly associated with the approval severity and likelihood of precision farming technologies.

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Data Management in Large-Scale Education Research

Crystal Lewis

Research data management is becoming more complicated. Researchers are collecting more data, using more complex technologies, all while increasing the visibility of our work with the push for data sharing and open science practices. This book is for anyone involved in a research study involving original data collection. While the book focuses on quantitative data, typically collected from human participants, many of the practices covered can apply to other types of data as well. The book contains foundational context, instructions, and practical examples to help researchers in the field of education.

Chapman & Hall
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Pb: 978-1-032-62279-8: **$74.99**
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Data Science

A First Introduction with Python

Tiffany Timbers University of British Columbia**, Trevor Campbell , Melissa Lee** Assistant Professor, Uni of British Columbia, Canada**, Joel Ostblom , Lindsey Heagy** Professor, Uni of British Columbia, Canada

Series: Chapman & Hall/CRC Data Science Series

This book focuses on using the Python programming language in Jupyter notebooks to perform data manipulation and cleaning, create effective visualizations, and extract insights from data using classification, regression, clustering, and inference. The text emphasizes workflows that are clear, reproducible, and shareable, and includes coverage of the basics of version control. All source code is available online, demonstrating the use of good reproducible project workflows. The book is designed for learners from all disciplines with minimal prior knowledge of mathematics and programming. The authors have honed the material through years of experience teaching.

Chapman & Hall
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Pb: 978-1-032-57223-9: **$69.99**
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Data Science and Risk Analytics in Finance and Insurance

Tze Leung Lai Stanford university Stanford University Stanford University, California, USA Stanford University, California, USA**, Haipeng Xing** SUNY, Stony Brook, New York, USA

Series: Chapman and Hall/CRC Financial Mathematics Series

This book presents statistics and data science methods for risk analytics in quantitative finance and insurance. Part I covers the background, financial models, and data analytical methods for market risk, credit risk, and operational risk in financial instruments, as well as models of risk premium and insolvency in insurance contracts. Part II provides an overview of machine learning, Monte Carlo simulation, and sequential analysis techniques for risk analytics. In Part III, the book offers a non-technical introduction to four key areas in financial technology: artificial intelligence, blockchain, cloud computing, and big data analytics.

CRC Press
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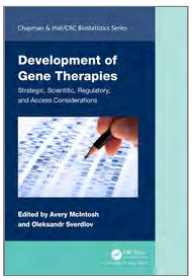
Development of Gene Therapies

Strategic, Scientific, Regulatory, and Access Considerations



Edited by **Avery McIntosh** Apellis Pharmaceuticals|Novartis, USA**, Oleksandr Sverdlov** Apellis Pharmaceuticals|Novartis, USA

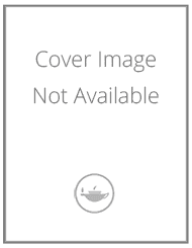
Series: Chapman & Hall/CRC Biostatistics Series

Development of Gene Therapies: Strategic, Scientific, and Regulatory, and Access Considerations summarizes the current state-of-the-art strategic, scientific, statistical, and regulatory aspects of GTx development. Intended to provide an exposition to the GTx new product development through peer-reviewed papers written by subject matter experts in this emerging field, this book will be useful for researchers in gene therapy drug development, biostatisticians, regulators, patient advocates, graduate students, and the finance and business development community.

Chapman & Hall
May 2024:490
Hb: 978-1-032-13655-4: **$200**
eBook: 978-1-003-23034-2
* For **full contents** and more information, visit: **www.routledge.com/9781032136554**

Empirical Research in Accounting

Tools and Methods



Ian D. Gow University of Melbourne, Australia**, Tongqing Ding** University of Melbourne, Australia

Series: Chapman and Hall/CRC Series on Statistics in Business and Economics

This textbook provides the foundation for a course that takes PhD students in empirical accounting research from the very basics of statistics, data analysis, and causal inference up to the point at which they conduct their own research. Starting with foundations in statistics, econometrics, causal inference, and institutional knowledge of accounting and finance, the book moves on to an in-depth coverage of the core papers in capital market research. Readers of the book will develop deep data analysis skills using modern tools. Extensive replication and simulation analysis is included throughout.

Chapman & Hall
November 2024:584
Hb: 978-1-032-58650-2: **$130**
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Exploring Complex Survey Data Analysis Using R

A Tidy Introduction with {srvyr} and {survey}

Stephanie Zimmer , Rebecca Powell , Isabella Velásquez

In this book, readers embark on an in-depth journey into conducting complex survey analysis with the {srvyr} package and tidyverse family of functions from the R programming language. Intended for intermediate R users familiar with the basics of the tidyverse, this book gives readers a deeper understanding of applying appropriate survey analysis techniques using {srvyr}, {survey}, and other related packages. Readers will develop the skills necessary to perform impactful survey analysis on survey data collected through a randomized sample design. Additionally, this book teaches readers how to interpret and communicate results of survey data effectively.

Chapman & Hall
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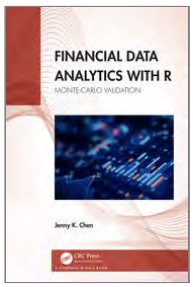
Hb: 978-1-032-30286-7: **$89.99**
* For **full contents** and more information, visit: **www.routledge.com/9781032302867**

Financial Data Analytics with R

Monte-Carlo Validation



Jenny K. Chen Morgan Stanley, U.S.A

This book is a comprehensive exploration of statistical methodologies and their applications in finance. Readers are taken on a journey in each chapter through practical explanations and examples, enabling them to develop a solid foundation of these methods in R and their applications in finance. This book serves as an indispensable resource for finance professionals, analysts, and enthusiasts seeking to harness the power of data-driven decision-making. Whether you are a seasoned professional or a newcomer to the world of financial analytics, this book serves as a guiding light, empowering you to navigate the landscape of finance with precision and confidence.

Chapman & Hall
July 2024:298
Pb: 978-1-032-74149-9: **$82.99**
Hb: 978-1-032-74511-4: **$200**
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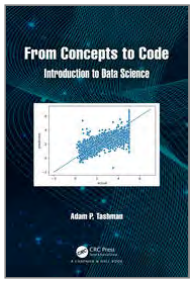
* For **full contents** and more information, visit: **www.routledge.com/9781032741499**

From Concepts to Code

Introduction to Data Science



Adam P. Tashman

The breadth of problems that can be solved with data science is astonishing, and this book provides the required tools and skills to a broad audience. The reader takes a journey into the forms, uses, and abuses of data and models, and learns how to critically examine each step. Python coding and data analysis skills are built from the ground up, with no prior coding experience assumed. The necessary background in computer science, mathematics, and statistics is provided in an approachable manner. The book leverages content developed by the author for a full-year data science course suitable for advanced high school or early undergraduate students.

Chapman & Hall
April 2024:385
Pb: 978-1-032-51798-8: **$74.99**
Hb: 978-1-032-51795-7: **$190**
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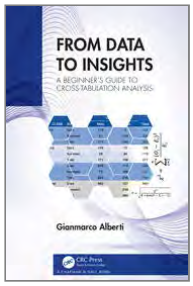
* For **full contents** and more information, visit: **www.routledge.com/9781032517988**

From Data to Insights

A Beginner's Guide to Cross-Tabulation Analysis



Gianmarco Alberti University of Malta, Malta

This book offers a clear and accessible guide to cross-tabulation analysis, transforming a complex subject into an accessible topic. It diverges from traditional statistical texts, addressing common questions and concerns. The book covers the spectrum from foundational elements to comparatively more advanced topics in cross-tabulation analysis. It includes a comprehensive glossary and an appendix of detailed examples, providing practical insight and aiding understanding of key concepts. This book is an invaluable resource for students, researchers, and educators alike, offering a fresh perspective on cross-tabulation analysis that emphasises clarity and practical application.

Chapman & Hall
July 2024:170
Hb: 978-1-032-72038-8: **$140**
eBook: 978-1-032-72632-8
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Fundamental Statistical Concepts and Techniques in the Biological and Environmental Sciences

With jamovi

A. Bradley Duthie University of Stirling, UK.

Fundamental Statistical Concepts and Techniques in the Biological and Environmental Sciences: With jamovi is an introductory textbook for learning statistics. This book will be useful to students beginning their study of statistical concepts in biological and environmental sciences, whilst also acting as an insightful resource for teachers using jamovi in the classroom. Fundamental Statistical Concepts and Techniques in the Biological and Environmental Sciences is a valuable resource for anyone who wishes to understand and apply statistical techniques commonly used in the biological and environmental sciences.

Chapman & Hall
October 2024:372
Pb: 978-1-032-68718-6: **$66.99**
Hb: 978-1-032-69237-1: **$170**
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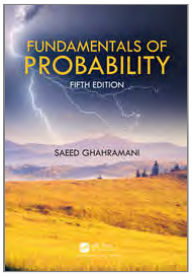
5TH EDITION

Fundamentals of Probability



Saeed Ghahramani

This one- or two-term calculus-based basic probability text is written for majors in mathematics, physical sciences, engineering, statistics, actuarial science, business and finance, operations research, and computer science. It presents probability in a natural way: through interesting and instructive examples and exercises that motivate the theory, definitions, theorems, and methodology. This book is mathematically rigorous and, at the same time, closely matches the historical development of probability. Whenever appropriate, historical remarks are included, and the 2096 examples and exercises have been designed to arouse curiosity and encourage students to delve into the theory.

Chapman & Hall
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International Edition Pb: 978-1-032-80353-1: $140
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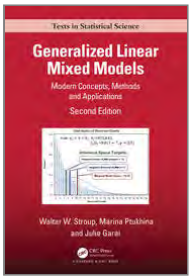
2ND EDITION

Generalized Linear Mixed Models

Modern Concepts, Methods and Applications



Walter W. Stroup , Marina Ptukhina Associate Professor, Whitman College**, Julie Garai** Associate Professor, Uni of Nebraska-Lincoln

Series: Chapman & Hall/CRC Texts in Statistical Science

Generalized Linear Mixed Models: Modern Concepts, Methods and Applications (2nd edition) presents an updated introduction to linear modeling using the generalized linear mixed model (GLMM) as the overarching conceptual framework. For students new to statistical modeling, this book helps them see the big picture – linear modeling as broadly understood and its intimate connection with statistical design and mathematical statistics. This second edition is updated to reflect lessons learned and experience gained regarding best practices and modelling choices faced by GLMM practitioners. New to this edition are two chapters focusing on Bayesian methods for GLMMs.

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eBook: 978-0-429-09206-0
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Geographic Information, Geospatial Technologies and Spatial Data Science for Health

Justine Blanford University of Twente, Netherlands

In this book, epidemiology and public health are integrated with spatial data science to examine health issues in dynamically changing environments. This is too broad a field to be completely covered in one book and so it has been necessary to be selective with the topics, methods and examples used to avoid overwhelming introductory readers, while at the same time providing sufficient depth for geospatial experts interested in health, and for health professionals interested in integrating geospatial elements for health analysis. A variety of geographic information are used to better understand health risks and disease outcomes.

Chapman & Hall
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Hb: 978-1-032-56356-5: **$120**
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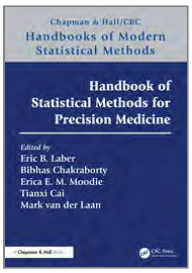
Handbook of Statistical Methods for Precision Medicine



Edited by **Eric Laber** North Carolina State University, Raleigh, USA**, Bibhas Chakraborty , Erica E. M. Moodie , Tianxi Cai , Mark van der Laan**

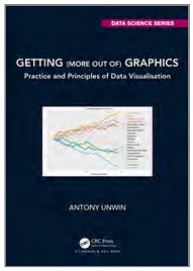
Series: Chapman & Hall/CRC Handbooks of Modern Statistical Methods

The statistical study and development of analytic methodology for individualization of treatments is no longer in its infancy. Many methods of study design, estimation, and inference exist, and the tools available to the analyst are ever growing. This handbook introduces the foundations of modern statistical approaches to precision medicine, bridging key ideas to active lines of current research in precision medicine. The contributions in this handbook vary in their level of assumed statistical knowledge; all contributions are accessible to a wide readership of statisticians and computer scientists including graduate students and new researchers in the area.

Chapman & Hall
October 2024:550
Hb: 978-1-032-10615-1: **$250**
* For **full contents** and more information, visit: **www.routledge.com/9781032106151**

Getting (more out of) Graphics

Practice and Principles of Data Visualisation



Antony Unwin University of Augsburg

Series: Chapman & Hall/CRC Data Science Series

Data graphics are used extensively to present information. Understanding graphics is a lot about understanding the data represented by the graphics, having a feel not just for the numbers themselves, the reliability and uncertainty associated with them, but also for what they mean. This book presents a practical approach to graphic data analysis with real applications front and centre. A knowledge of Statistics is not required, just an interest in data graphics and some experience of working with data. It will help if the reader knows something of basic graphic forms such as barcharts, histograms, and scatterplots.

Chapman & Hall
July 2024:448
Pb: 978-0-367-67399-4: **$74.99**
Hb: 978-0-367-67400-7: **$180**
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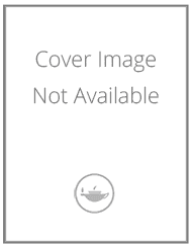
Introduction to Applied Spatial Econometrics



Roger S. Bivand , Gianfranco Piras West Virginia University, Morgantown, USA

The book addresses the underlying question of mis-specification in models estimated with spatial data, which can have many sources: variables not adequately operationalizing theoretical concepts; observations not matching the actual (but often unobservable) entities implied by spatial processes; omitted variables and errors in variables; inappropriate functional form leading to spatial patterning, etc. When spatial econometrics focusses on model estimation techniques, it is most often assumed that mis-specification is restricted to spatial autocorrelation and occasionally heteroskedasticity.

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Handbook of Sharing Confidential Data

Differential Privacy, Secure Multiparty Computation, and Synthetic Data

Edited by **Jörg Drechsler , Daniel Kifer , Jerome Reiter , Aleksandra Slavković**

Series: Chapman & Hall/CRC Handbooks of Modern Statistical Methods

Statistical agencies, research organizations, companies, and other data stewards that seek to share data with the public face a challenging dilemma. In an age when information on data subjects is available from a wide range of data sources, as are the computational resources to obtain that information, this challenge is increasingly difficult. The Handbook of Sharing Confidential Data helps data stewards understand how tools from the data confidentiality literature—specifically, synthetic data, formal privacy, and secure computation—can be used to manage trade-offs in disclosure risk and data usefulness.

Chapman & Hall
October 2024:376
Hb: 978-1-032-02803-3: **$200**
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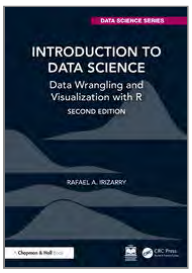
2ND EDITION

Introduction to Data Science

Data Wrangling and Visualization with R



Rafael A. Irizarry

Series: Chapman & Hall/CRC Data Science Series

Thoroughly revised and updated, this is the first book of the second edition of Introduction to Data Science: Data Wrangling and Visualization with R. It introduces skills that can help you tackle real-world data analysis challenges. No previous knowledge of R is necessary, although some experience with programming may be helpful. If you read and understand all the chapters and complete all the exercises in this book, and understand statistical concepts, you will be well-positioned to perform basic data analysis tasks and you will be prepared to learn the more advanced concepts and skills needed to become an expert.

Chapman & Hall
August 2024:376
Hb: 978-1-032-11655-6: **$69.99**
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Introduction to Quantitative Social Science with Python

Weiqi Zhang , Dmitry Zinoviev

Series: Chapman & Hall/CRC The Python Series

Departing from traditional methodologies of teaching data analysis, this book presents a dual-track learning experience, with both Executive and Technical Tracks, designed to accommodate readers with various learning goals or skill levels. Through integrated content, readers can explore fundamental concepts in data analysis while gaining hands-on experience with Python programming, ensuring a holistic understanding of theory and practical application in Python. This book offers a comprehensive and accessible guide to mastering the art and science of data analysis in social science research.

Chapman & Hall
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Pb: 978-1-032-35659-4: **$66.99**
Hb: 978-1-032-35460-6: **$180**
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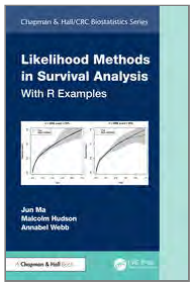
Likelihood Methods in Survival Analysis

With R Examples



Jun Ma Department of Statistics, Faculty of Science and Engineering, Macquarie University**, Malcolm Hudson , Annabel Webb** Macquarie University, Australia

Series: Chapman & Hall/CRC Biostatistics Series

The use of likelihood methods in survival analysis, focussing on data that is subject to censoring, including left, right and interval censoring. It covers maximum likelihood estimation, partial likelihood methods, the maximum penalized likelihood method, competing risks, and joint models. The book includes lots of real examples to illustrate the methodology, with R code in the text, and it is supplemented by an R package featuring all code and data.

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Mathematical Engineering of Deep Learning

Benoit Liquet , Sarat Moka , Yoni Nazarathy

Series: Chapman & Hall/CRC Data Science Series

Provides a complete and concise overview of deep learning using the language of mathematics. Provides a self-contained background on machine learning and optimization algorithms, and progresses through the key ideas of deep learning. Ideas and architectures include deep neural networks, convolutional models, recurrent models, long short term memory, the attention mechanism, transformers, variational auto-encoders, diffusion models, generative adversarial networks, reinforcement learning, and graph neural networks.

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Model-Based Monitoring and Statistical Control

Kohei Ohtsu

Series: Chapman & Hall/CRC Interdisciplinary Statistics

Available in English for the first time, this classic and influential book by the late Kohei Otshu presents real examples of ships in motion under irregular ocean waves, how to understand the characteristics of fluctuations of stochastic phenomena through spectral analysis methods and statistical modeling. It also explains how to realize prediction and optimal control based on time series models. Part 1 describes classical spectral method for the analysis of stochastic phenomena. In Part 2, this book explains methods to construct time series models using the information criterion. Part 3 presents the basic knowledge necessary for understanding these topics of the book.

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Modern Data Visualization with R

Robert Kabacoff

Series: Chapman & Hall/CRC The R Series

Describes ways that raw and summary data can be turned into visualizations that convey meaningful insights: basic graphs, bar charts, scatter plots, and line charts, and progresses to tree maps, alluvial plots, radar charts, mosaic plots, grouped dot plots, effects plots, multivariate presentations such as corrgrams, biplots, network diagrams.

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2ND EDITION

Modern Statistics with R

From Wrangling and Exploring Data to Inference and Predictive Modelling

Måns Thulin

Recent decades have transformed the world of statistical data analysis, with new methods, new types of data, and new computational tools. Modern Statistics with R introduces key parts of this modern statistical toolkit. No prior programming experience is necessary. Clear explanations and examples are provided to accommodate readers at all levels of familiarity with statistical principles and coding practices. A basic understanding of probability theory can enhance comprehension of certain concepts discussed within this book. In addition to plenty of examples, the book includes more than 200 exercises, with fully worked solutions available at www.modernstatisticswithr.com.

Chapman & Hall
August 2024:492
Pb: 978-1-032-51244-0: **$79.95**
Hb: 978-1-032-49745-7: **$200**
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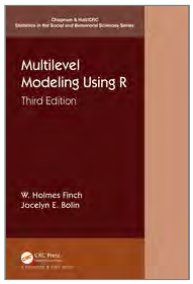
3RD EDITION

Multilevel Modeling Using R



W. Holmes Finch Ball State University, USA**, Jocelyn E. Bolin** Ball State University, USA

Series: Chapman & Hall/CRC Statistics in the Social and Behavioral Sciences

Like its bestselling predecessor, Multilevel Modeling Using R, Third Edition provides the reader with a helpful guide to conducting multilevel data modeling using the R software environment. The third edition of the book includes several new topics that were not present in the second edition. Specifically, a new chapter has been included, focussing on fitting multilevel latent variable modeling in the R environment. This updated revision gives the reader state-of-the-art tools to launch their own investigations in multilevel modeling.

Chapman & Hall
April 2024:338
Pb: 978-1-032-36394-3: **$71.99**
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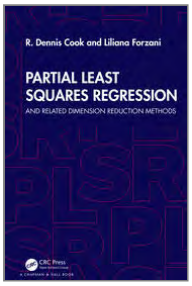
Partial Least Squares Regression

and Related Dimension Reduction Methods



R. Dennis Cook University of Minnesota, U.S.A**, Liliana Forzani** Universidad Nacional del Litoral, Argentina

Partial least squares (PLS) regression is, at its historical core, a black-box algorithmic method for dimension reduction and prediction based on an underlying linear relationship between a possibly vector-valued response and a number of predictors. Through envelopes, much more has been learned about PLS regression, resulting in a mass of information that allows an envelope bridge that takes PLS regression from a black-box algorithm to a core statistical paradigm based on objective function optimization and, more generally, connects the applied sciences and statistics in the context of PLS. This book focuses on developing this bridge.

Chapman & Hall
July 2024:456
Hb: 978-1-032-77318-6: **$100**
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5TH EDITION

Multivariate Statistical Methods

A Primer

Bryan F.J. Manly University of Otago, Dunedin, New Zealand**, Jorge A. Navarro , Ken Gerow**

Great starting point for readers looking to become proficient in multivariate statistical methods, but who might not be deeply versed in the language of mathematics. In this edition, we provide readers with conceptual introductions to methods, practical suggestions, new references, and a more extensive collection of R functions and code that will help them to deepen their toolkit of multivariate statistical methods.

Chapman & Hall
October 2024:334
Pb: 978-1-032-59197-1: **$66.99**
Hb: 978-1-032-59200-8: **$180**
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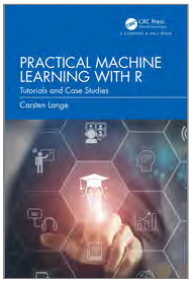
Practical Machine Learning with R

Tutorials and Case Studies



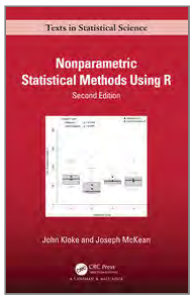
Carsten Lange Professor of Economics, Cal Poly Pomona, USA.

This textbook is a comprehensive guide to machine learning and artificial intelligence tailored for students in business and economics. It takes a hands-on approach to teach machine learning, emphasizing practical applications over complex mathematical concepts. Students are not required to have advanced mathematics knowledge such as matrix algebra or calculus. This book is not just a textbook; it is a dynamic learning experience that empowers students and instructors alike with a practical and accessible approach to machine learning in business and economics.

Chapman & Hall
May 2024:368
Hb: 978-1-032-43405-6: **$100**
eBook: 978-1-003-36714-7
* For **full contents** and more information, visit: **www.routledge.com/9781032434056**

2ND EDITION

Nonparametric Statistical Methods Using R



John Kloke , Joseph McKean

Series: Chapman & Hall/CRC Texts in Statistical Science

This thoroughly updated and expanded second edition covers traditional nonparametric methods and rank-based analyses. Two new chapters covering multivariate analyses and big data have been added. Core classical nonparametrics chapters on one- and two-sample problems have been expanded to include discussions on ties as well as power and sample size determination. The book is suitable for advanced undergraduate and graduate students in statistics and data science, and students of other majors with a solid background in statistical methods including regression and ANOVA. It will also be of use to researchers working with nonparametric and rank-based methods in practice.

Chapman & Hall
May 2024:480
Hb: 978-0-367-65135-0: **$91.99**
eBook: 978-1-003-03961-7
* For **full contents** and more information, visit: **www.routledge.com/9780367651350**

Predictive Data Modelling for Biomedical Data and Imaging

Edited by **Poonam Tanwar , Tapas Kumar , K. Kalaiselvi , Haider Raza , Seema Rawat**

Series: River Publishers Series in Biotechnology and Medical Research

In this book, we embark on a journey into the realm of predictive data modeling for biomedical data and imaging in healthcare. It explores the potential of predictive analytics in the field of medical science through utilizing various tools and techniques to unravel insights and enhance patient care. Predictive Data Modelling for Biomedical Data and Imaging is divided into three sections, namely Section I – Beginning of Predictive Data Modeling for Biomedical Data and Imaging/Healthcare, Section II – Data Design and Analysis for Biomedical Data and Imaging/Healthcare, and Section III – Case Studies of Predictive Analytics for Biomedical Data and Imaging/Healthcare.

River Publishers
September 2024:392
Hb: 978-8-770-04077-8: **$132**
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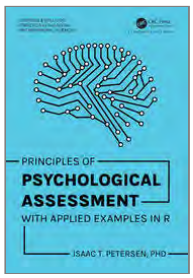
Principles of Psychological Assessment

With Applied Examples in R



Isaac T. Petersen

Series: Chapman & Hall/CRC Statistics in the Social and Behavioral Sciences

Discusses psychometrics, the assessment of various psychological domains, various measurement methods and emerging analytical frameworks to evaluate and improve assessment, generalizability theory, structural equation modeling, item response theory, and signal detection theory, ethics, test bias, and cultural and individual diversity.

Chapman & Hall
May 2024:646
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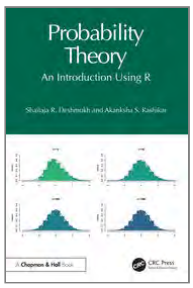
Probability Theory

An Introduction Using R



Shailaja R. Deshmukh Savitribai Phule Pune University, India**, Akanksha S. Kashikar** Savitribai Phule Pune University, India

This book introduces Probability Theory with R software and explains abstract concepts in a simple and easy-to-understand way by combining theory and computation. It discusses conceptual and computational examples in detail, to provide a thorough understanding of basic techniques and develop an enjoyable read for students seeking suitable material for self-study. It illustrates fundamental concepts including fields, sigma-fields, random variables and their expectations, various modes of convergence of a sequence of random variables, laws of large numbers and the central limit theorem.

Chapman & Hall
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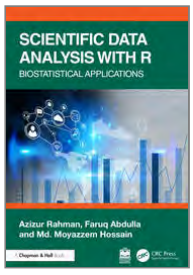
Scientific Data Analysis with R

Biostatistical Applications



Azizur Rahman , Faruq Abdulla , Md. Moyazzem Hossain

This book is the ideal companion in navigating the convergence of statistical methodologies and data science techniques with diverse applications implemented in the open-source environment of R. This book is intended for students, researchers, and professionals eager to harness the combined power of biostatistics, data science, and the R programming language while gathering vital statistical knowledge needed for cutting-edge scientists in all fields. It is useful for those seeking to understand the basics of data science and statistical analysis, or looking to enhance their skills in handling any simple or complex data including biological, health, medical, and industry data.

Chapman & Hall
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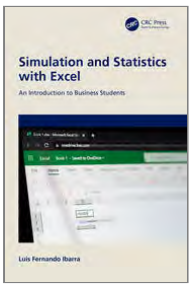
Simulation and Statistics with Excel

An Introduction to Business Students



Luis Fernando Ibarra UNET Tachira University, Venezuela

Simulation and Statistics with Excel: An Introduction to Business Students offers a non-rigorous and practical tour of the simulation procedure on computers, using a versatile and accessible resource, the Microsoft Excel spreadsheet. This book covers the concepts essential to understanding the basic principles and approaches of statistical simulation, allowing for the study of complex systems. Aimed at students in business and operational research beginning to use simulation as an instrument for understanding existing or proposed processes, this book will lay solid foundations in understanding simulation experimentation.

Chapman & Hall
May 2024:290
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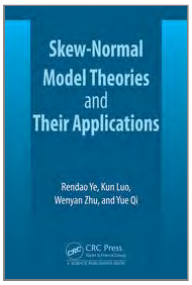
Skew-Normal Model Theories and Their Applications



Rendao Ye Hangzhou Dianzi University, China**, Wenyan Zhu** Hangzhou Dianzi Uni, China**, Yue Qi** Hangzhou Dianzi Uni, China**, Kun Luo** Hangzhou Normal Uni, China

This book focuses on several skew-normal mixed effects models, and systematically explores the statistical inference theories, methods, and applications of parameters of interest. This book is of academic value, since it helps to establish a series of statistical inference theories and methods for skew-normal mixed effects models. It will also provide efficient methods and tools for practical data analysis in various fields including economics, finance, biology and medical science, which features its application value.

CRC Press
November 2024:272
Hb: 978-1-032-69469-6: **$140**
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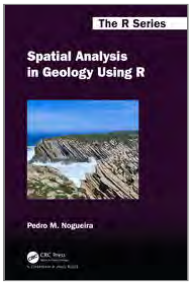
Spatial Analysis in Geology Using R



Pedro M. Nogueira

Series: Chapman & Hall/CRC The R Series

Unlock the Power of Spatial Analysis in Geology with R! Empowers you to harness the potential of spatial analysis in addressing pressing geological challenges. Can also be used as a textbook either in introductory courses in spatial analysis or in advanced GIS and Digital mapping - comprehensive guide tailored to professionals at all levels.

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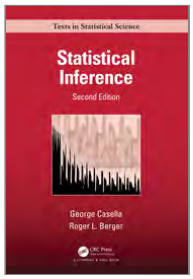
2ND EDITION

Statistical Inference



George Casella , Roger Berger

Series: Chapman & Hall/CRC Texts in Statistical Science

This classic textbook builds theoretical statistics from the first principles of probability theory. Starting from the basics of probability, the authors develop the theory of statistical inference using techniques, definitions, and concepts that are statistical and are natural extensions, and consequences, of previous concepts. It covers all the topics from a standard inference course, including distributions, random variables, data reduction, point estimation, hypothesis testing, interval estimation, and regression.

Chapman & Hall
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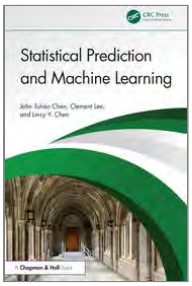
Statistical Prediction and Machine Learning



John Tuhao Chen Bowling Green State University, Ohio, USA**, Clement Lee , Lincy Y. Chen** Cornell University, U.S.A

Written by an experienced statistics educator and two data scientists, this book unifies conventional statistical thinking and contemporary machine learning framework into a single overarching umbrella over data science. The book is designed to bridge the knowledge gap between conventional statistics and machine learning. It provides an accessible approach for readers with a basic statistics background to develop a mastery of machine learning. One of the distinct features of this book is the comprehensive coverage of the topics in statistical learning and medical applications. It summarizes the authors' teaching, research, and consulting experience in which they use data analytics.

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August 2024:314
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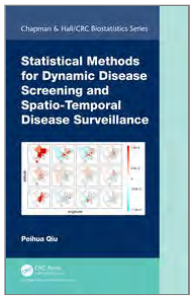
Statistical Methods for Dynamic Disease Screening and Spatio-Temporal Disease Surveillance



Peihua Qiu

Series: Chapman & Hall/CRC Biostatistics Series

Disease screening and disease surveillance (DSDS) constitute two critical areas in public health, each presenting distinctive challenges primarily due to their sequential decision-making nature and complex data structures. Explores numerous recent analytic methodologies that enhance traditional techniques. Demonstrates how these novel methods effectively address the challenges of DSDS.

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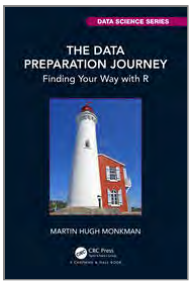
The Data Preparation Journey

Finding Your Way with R



Martin Hugh Monkman University of Victoria, Division of Continuing Studies, Canada

Series: Chapman & Hall/CRC Data Science Series

This book introduces the principles of data preparation within in a systematic approach that follows a typical data science or statistical workflow. This book is designed for readers with a working knowledge of data manipulation functions in R or other programming languages. It is suitable for academics for whom analyzing data is crucial, businesses who make decisions based on the insights gleaned from collecting data from customer interactions, and public servants who use data to inform policy and program decisions. The principles and practices described within The Data Preparation Journey apply regardless of the context.

Chapman & Hall
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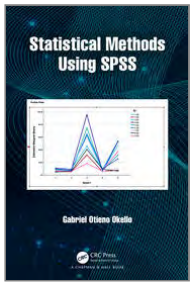
Statistical Methods Using SPSS



Gabriel Otieno Okello

Statistical Methods Using SPSS provides a practical approach for better understanding of the advanced statistical concepts that are applied in business, economics, epidemiology, public health, agriculture and other areas of data analytics. This book is useful in explaining advanced statistical analysis techniques to postgraduate students, doctoral students and researchers. It is also a useful reference for students and researchers who require further guidance in advanced data analysis, and is designed for those with basic statistical knowledge. Exercises and solution manuals are also included to aid in the understanding of the statistical analysis techniques.

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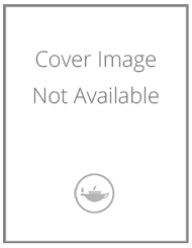
The Polls Weren't Wrong



Carl Allen

By first understanding how polls work at a fundamental level, this book gives readers the ability to discern flaws in the current methods. Then, through specific political examples from both the US and UK, it is shown how polls famously derided as "wrong" were, in fact, accurate. While polls are not always accurate, the reasons we can and can't (rightly) call them "wrong" are explained in this book. This book will equip readers with the tools to navigate the mismatch of expectations. It is not intended to replace more technical applications of statistics but is accessible to anyone interested to learn more about how poll data should be understood.

Chapman & Hall
September 2024:352
Pb: 978-1-032-48302-3: **$49.99**
Hb: 978-1-032-48614-7: **$130**
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Tidy Finance with Python

Christoph Scheuch , Stefan Voigt , Patrick Weiss Reykjavík University, Iceland**, Christoph Frey** Pinechip Capital, Germany

Series: Chapman & Hall/CRC The Python Series

This book shows how to bring theoretical concepts from finance and econometrics to the data. Focusing on coding and data analysis with Python, how to conduct research in empirical finance from scratch is shown. We start by introducing the concepts of tidy data and coding principles using pandas, numpy, and plotnine. Code is provided to prepare common open-source and proprietary financial data sources and organize them in a database. We reuse these data in all the subsequent chapters, which we keep as self-contained as possible. The empirical applications range from key concepts of empirical asset pricing to modeling and machine learning applications.

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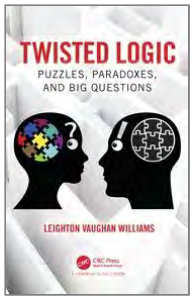
Twisted Logic

Puzzles, Paradoxes, and Big Questions



Leighton Vaughan Williams

Draws upon an array of popular and novel puzzles, problems, and paradoxes, and uses these to help understand and navigate our everyday world. Addresses some of the big questions. Aimed at all those interested in learning about weird and wonderful problems and paradoxes. Designed for everyone - accessible to the layman and student alike. No prior mathematical skill or technical knowledge is required.

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2ND EDITION

Understanding Elections through Statistics

Polling, Prediction, and Testing

Ole J. Forsberg

Series: Chapman & Hall/CRC Statistics in the Social and Behavioral Sciences

Regarding elections and polls, it explores this random phenomenon from three primary points of view: predicting election outcome using opinion polls, testing outcome using government-reported data, and exploring election data to better understand the people.

Chapman & Hall
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