

A background network diagram consisting of numerous interconnected nodes and lines, creating a complex web-like structure. The nodes are represented by small black dots, and the lines are thin black lines connecting them. The overall appearance is that of a data network or a complex graph.

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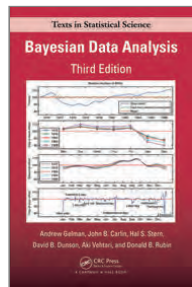


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3RD EDITION

Bayesian Data Analysis



Andrew Gelman, John B. Carlin, Hal S. Stern, David B. Dunson, Aki Vehtari, Donald B. Rubin

Series: Chapman & Hall/CRC Texts in Statistical Science

Winner of the 2016 De Groot Prize from the International Society for Bayesian Analysis. Now in its third edition, this classic book continues to take an applied approach to analysis using up-to-date Bayesian methods. Along with new and revised software code, this edition includes four new chapters on nonparametric modeling, updates the discussion of cross-validation and predictive information criteria, and improves convergence monitoring and effective sample size calculations for iterative simulation. It also covers weakly informative priors, boundary-avoiding priors, Hamiltonian Monte Carlo, variational Bayes, and expectation propagation. Data sets and other materials are available online.

Chapman & Hall
November 2013:675
Hb: 978-1-439-84095-5: **£79.99**
eBook: 978-0-429-11307-9

* For full contents and more information, visit: www.routledge.com/9781439840955

Bayesian Inference

Theory, Methods, Computations



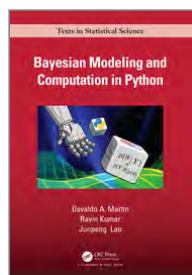
Silvelyn Zwanzig, Rauf Ahmad

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.

Chapman & Hall
July 2024:360
Hb: 978-1-032-10949-7: **£150**
Pb: 978-1-032-11809-3: **£59.99**

* For full contents and more information, visit: www.routledge.com/9781032118093

Bayesian Modeling and Computation in Python



Osvaldo A. Martin, Ravin Kumar, Junpeng Lao

Series: Chapman & Hall/CRC Texts in Statistical Science

Bayesian Modeling and Computation in Python will enable readers to grasp the fundamental assumptions behind Bayesian statistical methods and how to apply them to a wide array of data analysis problems. The book will provide a clear path from elementary statistical ideas to advanced ones and will also provide a bridge between statistics and probabilistic machine learning ideas always with a focus on effective application of Bayesian models.

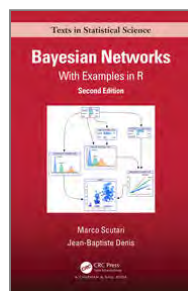
Chapman & Hall
December 2021:420
Hb: 978-0-367-89436-8: **£76.99**
eBook: 978-1-003-01916-9

* For full contents and more information, visit: www.routledge.com/9780367894368

2ND EDITION

Bayesian Networks

With Examples in R



Marco Scutari, Jean-Baptiste Denis

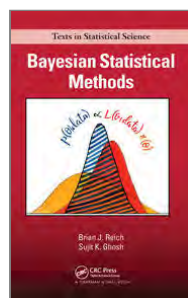
Series: Chapman & Hall/CRC Texts in Statistical Science

The book introduces Bayesian networks using a hands-on approach, through simple yet meaningful examples. Discrete Bayesian networks are described first (Chapter 2), followed by Gaussian Bayesian networks (Chapter 3). Mixed networks (which include arbitrary random variables, and typically mix continuous and discrete ones) are covered as well (Chapter 4). These chapters explain the whole process of Bayesian network modelling, from structure learning to parameter learning to inference. All steps in learning are illustrated with R code.

Chapman & Hall
July 2021:274
Hb: 978-0-367-36651-3: **£84.99**
eBook: 978-0-429-34743-6

* For full contents and more information, visit: www.routledge.com/9780367366513

Bayesian Statistical Methods



Brian J. Reich, Sujit K. Ghosh

Bayesian Statistical Methods is designed to provide a good balance of theory and computational methods that will appeal to students and practitioners with minimal mathematical and statistical background and no experience in Bayesian statistics to students and practitioners looking for advanced methodologies. Chapters 1-4 introduce Bayesian concepts at an elementary level. The second part of the book covers advanced topics such as high-dimensional parameter spaces, dependent data models, models for data irregularities and priors on infinite dimensional parameter spaces.

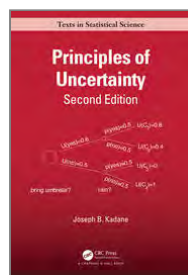
Chapman & Hall
June 2021:288
Hb: 978-0-815-37864-8: **£84.99**
Pb: 978-1-032-09318-5: **£39.99**

eBook: 978-0-429-20229-2

* For full contents and more information, visit: www.routledge.com/9781032093185

2ND EDITION

Principles of Uncertainty



Joseph B. Kadane

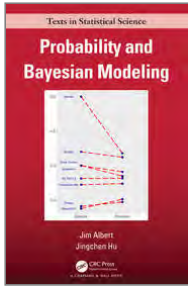
Series: Chapman & Hall/CRC Texts in Statistical Science

Like the De Groot winning first edition, the second edition of Principles of Uncertainty is an accessible, comprehensive guide to the theory of Bayesian Statistics written in an appealing, inviting style, and packed with interesting examples. It presents an accessible, comprehensive guide to the subjective Bayesian approach which has played a pivotal role in game theory, economics, and the recent boom in Markov Chain Monte Carlo methods. This new edition has been updated throughout and features a new chapter on Nonparametric Bayesian Methods.

Chapman & Hall
August 2020:524
Hb: 978-1-138-05273-4: **£99.99**
eBook: 978-1-315-16756-5

* For full contents and more information, visit: www.routledge.com/9781138052734

Probability and Bayesian Modeling



Jim Albert, Jingchen Hu

Series: *Chapman & Hall/CRC Texts in Statistical Science*

Bayesian statistics has been advancing in all aspects (theoretically, methodologically and computationally) in recent years. Based on an intuitive interpretation and understanding of probability, Bayesian learning provides a natural framework for students to think and solve scientific problems. This book provides an introduction to Bayesian analysis for undergraduate students with calculus, statistics and computational background.

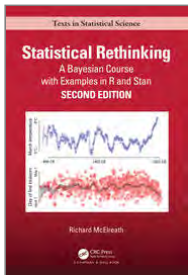
Chapman & Hall
December 2019:552
Hb: 978-1-138-49256-1: **£82.99**
eBook: 978-1-351-03014-4

* For full contents and more information, visit: www.routledge.com/9781138492561

2ND EDITION

Statistical Rethinking

A Bayesian Course with Examples in R and STAN



Richard McElreath

Series: *Chapman & Hall/CRC Texts in Statistical Science*

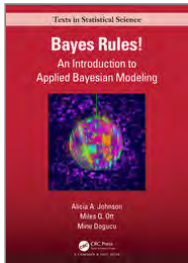
The very popular *Statistical Rethinking: A Bayesian Course with Examples in R and Stan, Second Edition* builds readers' knowledge of and confidence in statistical modeling. Reflecting the need for even minor programming in today's model-based statistics, the book pushes readers to perform step-by-step calculations that are usually automated. This unique computational approach ensures that readers understand enough of the details to make reasonable choices and interpretations in their own modeling work.

Chapman & Hall
March 2020:612
Hb: 978-0-367-13991-9: **£76.99**
eBook: 978-0-429-02960-8

* For full contents and more information, visit: www.routledge.com/9780367139919

Bayes Rules!

An Introduction to Applied Bayesian Modeling



Alicia A. Johnson, Miles Q. Ott, Mine Dogucu

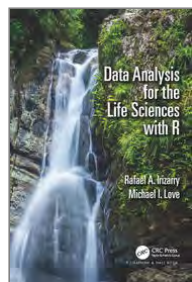
Series: *Chapman & Hall/CRC Texts in Statistical Science*

An engaging, sophisticated, and fun introduction to the field of Bayesian Statistics, *Bayes Rules! An Introduction to Bayesian Modeling with R* brings the power of modern Bayesian thinking, modeling, and computing to a broad audience. In particular, it is an ideal resource for advanced undergraduate Statistics students and practitioners with comparable experience. *Bayes Rules!* empowers readers to weave Bayesian approaches into their everyday practice.

Chapman & Hall
March 2022:544
Hb: 978-1-032-19159-1: **£175**
Pb: 978-0-367-25539-8: **£61.99**
eBook: 978-0-429-28834-0

* For full contents and more information, visit: www.routledge.com/9780367255398

Data Analysis for the Life Sciences with R



Rafael A. Irizarry, Michael I. Love

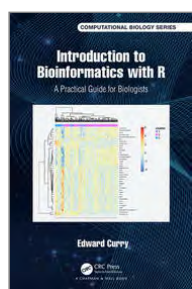
This book covers several of the statistical concepts and data analytic skills needed to succeed in data-driven life science research. The authors proceed from relatively basic concepts related to computed p-values to advanced topics related to analyzing high-throughput data. They include the R code that performs this analysis and connect the lines of code to the statistical and mathematical concepts explained.

Chapman & Hall
July 2016: 376
Hb: 978-1-138-40720-6: £175
Pb: 978-1-498-77567-0: £47.99
eBook: 978-1-315-36700-2

* For full contents and more information, visit: www.routledge.com/9781498775670

Introduction to Bioinformatics with R

A Practical Guide for Biologists



Edward Curry

Series: Chapman & Hall/CRC Computational Biology Series

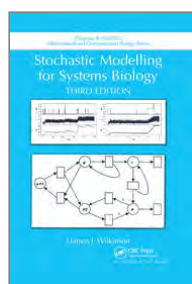
This book has been developed over years of training biological scientists and clinicians to analyse the large datasets available in their cancer research projects. Through the entire book, theoretical explanations are presented alongside step-by-step instructions for carrying out a number of widely-applicable data analysis tasks using freely available software. This book guides the reader through the basic principles of exploratory analysis and hypothesis testing in high-dimensional datasets, and the practicalities of installing statistical computing software and using this to handle different types of data tables.

Chapman & Hall
November 2020: 310
Hb: 978-1-138-49895-2: £150
Pb: 978-1-138-49571-5: £54.99
eBook: 978-1-351-01531-8

* For full contents and more information, visit: www.routledge.com/9781138495715

3RD EDITION

Stochastic Modelling for Systems Biology, Third Edition



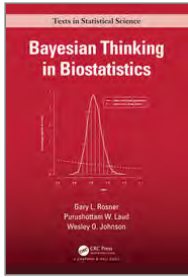
Darren J. Wilkinson

Having been thoroughly updated to reflect this, this third edition covers everything necessary for a good appreciation of stochastic kinetic modelling of biological networks in the systems biology context. New methods and applications are included in the book, and the use of R for practical illustration of the algorithms has been greatly extended. There is a whole new chapter on spatially extended systems, and the statistical inference chapter has also been extended with new methods, including approximate Bayesian computation (ABC). The book is now supplemented by an additional software library, written in Scala, described in a new appendix to the book.

Chapman & Hall
September 2020: 404
Hb: 978-1-138-54928-9: £89.99
Pb: 978-0-367-65693-5: £46.99
eBook: 978-1-351-00091-8

* For full contents and more information, visit: www.routledge.com/9780367656935

Bayesian Thinking in Biostatistics



Gary L Rosner, Purushottam W. Laud, Wesley O. Johnson

Series: Chapman & Hall/CRC Texts in Statistical Science

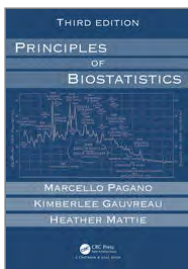
With discussions on many recent developments in Bayesian methodologies, Bayesian Thinking in Biostatistics considers statistical issues in biomedical research, allowing for greater collaborations between biostatisticians and biomedical researchers. The text presents biostatistical methods from a Bayesian perspective. It includes an overview of Bayesian statistics, a discussion of rates and proportions with applications in clinical and other population-based studies, recent developments in clinical trial design, methods for evaluating censored data and diagnostic tests, and problems resulting from multiple comparisons.

Chapman & Hall
 March 2021:621
 Hb: 978-1-439-80008-9: **£105**
 eBook: 978-1-439-80010-2

* For full contents and more information, visit: www.routledge.com/9781439800089

3RD EDITION

Principles of Biostatistics



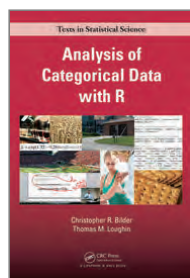
Marcello Pagano, Kimberlee Gauvreau, Heather Mattie

This book is a concepts-based introduction to statistical procedures that prepares public health, medical, and life sciences students to conduct and evaluate research. With an engaging writing style and helpful graphics, the emphasis is on concepts over formulas or rote memorization. Thoroughly revised and updated, this third edition includes a new chapter introducing the basic principles of Study Design, as well as new sections on sample size calculations for two-sample tests on means and proportions, the Kruskal-Wallis test, and the Cox proportional hazards model. It also includes additional review exercises in each chapter.

Chapman & Hall
 June 2022:620
 Hb: 978-0-367-35580-7: **£76.99**
 eBook: 978-0-429-34051-2

* For full contents and more information, visit: www.routledge.com/9780367355807

Analysis of Categorical Data with R



Christopher R. Bilder, Thomas M. Loughin

Series: Chapman & Hall/CRC Texts in Statistical Science

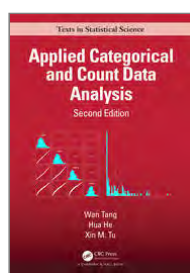
A modern account of categorical data analysis using the popular R software, this text covers model building and assessment methods for binary, multcategory, and count response variables and discusses fundamentals, such as odds ratio and probability estimation. The authors give detailed advice and guidelines on which procedures to use and why to use them. The text incorporates numerous examples from medicine, psychology, sports, ecology, and other areas, along with extensive R code and output. Data sets, R programs, and in-class recorded videos are available on the book's website.

Chapman & Hall
August 2014:552
Hb: 978-1-439-85567-6: **£105**
eBook: 978-0-429-17476-6

* For full contents and more information, visit: www.routledge.com/9781439855676

2ND EDITION

Applied Categorical and Count Data Analysis



Wan Tang, Hua He, Xin M. Tu

Series: Chapman & Hall/CRC Texts in Statistical Science

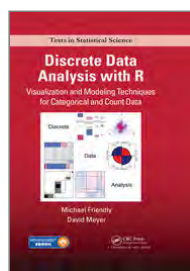
This second edition explains how to perform the statistical analysis of discrete data, including categorical and count outcomes. It covers classic concepts and popular topics, such as logistic regression models, along with modern areas including models for zero-modified count outcomes. R, SAS, SPSS, and Stata programming codes are provided for all the examples. Designed for a one-semester course for graduate and senior undergraduate students in biostatistics, this self-contained text is also suitable as a self-learning guide for biomedical and psychosocial researchers. It will help readers analyze data with discrete variables in a wide range of research fields.

Chapman & Hall
April 2023:400
Hb: 978-0-367-56827-6: **£76.99**
eBook: 978-1-003-10981-5

* For full contents and more information, visit: www.routledge.com/9780367568276

Discrete Data Analysis with R

Visualization and Modeling Techniques for Categorical and Count Data



Michael Friendly, David Meyer

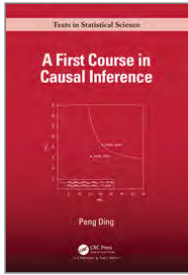
Series: Chapman & Hall/CRC Texts in Statistical Science

This text presents an applied treatment of modern methods for the analysis of categorical data, both discrete response data and frequency data. It explains how to use graphical methods for exploring data, spotting unusual features, visualizing fitted models, and presenting results. Along with describing the necessary statistical theory, the authors illustrate the practical application of the techniques to a large number of substantive problems. The data sets and R code are available on a supplementary website.

Chapman & Hall
December 2015:564
Hb: 978-1-498-72583-5: **£86.99**
eBook: 978-0-429-15443-0

* For full contents and more information, visit: www.routledge.com/9781498725835

A First Course in Causal Inference



Peng Ding

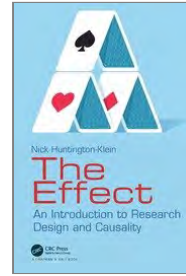
Series: *Chapman & Hall/CRC Texts in Statistical Science*

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.

Chapman & Hall
June 2024:448
Hb: 978-1-032-75862-6: £59.99
* For full contents and more information, visit: www.routledge.com/9781032758626

The Effect

An Introduction to Research Design and Causality



Nick Huntington-Klein

The Effect: An Introduction to Research Design and Causality is about research design, specifically concerning research that uses observational data to make a causal inference. It is separated into two halves, each with different approaches to that subject. The first half goes through the concepts of causality, with very little in the way of estimation. It introduces the concept of identification thoroughly and clearly and discusses it as a process of trying to isolate variation that has a causal interpretation. Subjects include heavy emphasis on data-generating processes and causal diagrams.

Chapman & Hall
January 2022:646
Hb: 978-1-032-12745-3: £84.99
Pb: 978-1-032-12578-7: £29.99
eBook: 978-1-003-22605-5
* For full contents and more information, visit: www.routledge.com/9781032125787

Causal Inference

What If



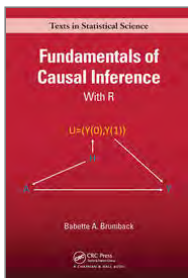
Miguel A. Hernan, James M. Robins

The application of causal inference methods is growing exponentially in fields that deal with observational data. Written by pioneers in the field, this practical book presents an authoritative yet accessible overview of the methods and applications of causal inference. With a wide range of detailed, worked examples using real epidemiologic data as well as software for replicating the analyses, the text provides a thorough introduction to the basics of the theory for non-time-varying treatments and the generalization to complex longitudinal data.

CRC Press
July 2024:312
Hb: 978-1-420-07616-5: £36.99
* For full contents and more information, visit: www.routledge.com/9781420076165

Fundamentals of Causal Inference

With R



Babette A. Brumback

Series: *Chapman & Hall/CRC Texts in Statistical Science*

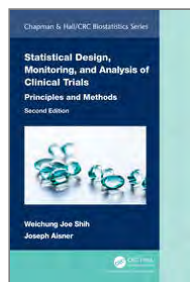
Explains and relates different methods of confounding adjustment in terms of potential outcomes and graphical models, including standardization, difference-in-differences estimation, the front-door method, instrumental variables estimation, and propensity score methods.

Chapman & Hall
November 2021:248
Hb: 978-0-367-70505-3: £58.99
eBook: 978-1-003-14667-4
* For full contents and more information, visit: www.routledge.com/9780367705053

2ND EDITION

Statistical Design, Monitoring, and Analysis of Clinical Trials

Principles and Methods



Weichung Joe Shih, Joseph Aisner

Series: Chapman & Hall/CRC Biostatistics Series

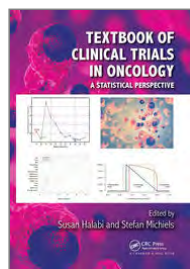
This book concentrates on the biostatistics component of clinical trials. This new edition is updated throughout and includes three new chapters. Developed from the authors' courses taught to public health and medical students, residents, and fellows during the past 15 years, the text shows how biostatistics in clinical trials is an integration of many fundamental scientific principles and statistical methods. The book begins with ethical and safety principles, core trial design concepts, the principles and methods of sample size and power calculation, and analysis of covariance and stratified analysis.

Chapman & Hall
October 2021:404
Hb: 978-0-367-77244-4: **£82.99**
eBook: 978-1-003-17652-7

* For full contents and more information, visit: www.routledge.com/9780367772444

Textbook of Clinical Trials in Oncology

A Statistical Perspective



Edited by Susan Halabi, Stefan Michiels

This is a textbook on the design and analysis of cancer clinical trials. It opens with a discussion of the choice of endpoints before moving onto discuss various types of trials across all phases of study, including basket trials, non-inferiority trials and multi-arm trials. It then covers some methodological topics, including missing data and competing risks, before several chapters cover aspects of personalized medicine. It includes contributions from various leading teachers and researchers, all thoroughly edited to ensure it is consistent in terms of level and style. It has lots of examples and case studies, and includes exercises to enable use as a course text or for self-study.

Chapman & Hall
December 2020:644
Hb: 978-1-138-08377-6: **£130**
Pb: 978-0-367-72957-8: **£48.99**
eBook: 978-1-315-11208-4

* For full contents and more information, visit: www.routledge.com/9780367729578

3RD EDITION

Probability and Statistics for Computer Scientists

**Michael Baron**

Presenting probability and statistical methods, simulation techniques, and modeling tools, this textbook helps students solve problems and make optimal decisions in uncertain conditions, select stochastic models, compute probabilities and forecasts, and evaluate performance of computer systems and networks. This third edition adds coverage of R including code for data analysis examples in the book.

Chapman & Hall

June 2019:486

Hb: 978-1-138-04448-7: £105

eBook: 978-1-315-17228-6

* For full contents and more information, visit: www.routledge.com/9781138044487

Computer Intensive Methods in Statistics



Silvelyn Zwanzig, Behrang Mahjani

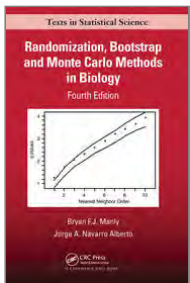
This textbook gives an overview of statistical methods that have been developed during the last years due to increasing computer use, including random number generators, Monte Carlo methods, Markov Chain Monte Carlo (MCMC) methods, Bootstrap, EM algorithms, SIMEX, variable selection, density estimators, kernel estimators, orthogonal and local polynomial estimators, wavelet estimators, splines, and model assessment. Computer Intensive Methods in Statistics is written for students at graduate level, but can also be used by practitioners.

Chapman & Hall
December 2019:226
Hb: 978-0-367-19425-3: **£145**
Pb: 978-0-367-19423-9: **£52.99**
eBook: 978-0-429-20232-2

* For **full contents** and more information, visit: www.routledge.com/9780367194239

4TH EDITION

Randomization, Bootstrap and Monte Carlo Methods in Biology



Bryan F.J. Manly, Jorge A. Navarro Alberto

Series: Chapman & Hall/CRC Texts in Statistical Science

Modern computer-intensive statistical methods play a key role in solving many problems across a wide range of scientific disciplines. Like its bestselling predecessors, the fourth edition of Randomization, Bootstrap and Monte Carlo Methods in Biology illustrates a large number of statistical methods with an emphasis on biological applications. The focus is now on the use of randomization, bootstrapping, and Monte Carlo methods in constructing confidence intervals and doing tests of significance. It provides comprehensive coverage of computer-intensive applications, with datasets available online.

Chapman & Hall
April 2022:358
Hb: 978-0-367-34994-3: **£120**
Pb: 978-0-367-51287-3: **£45.99**
eBook: 978-0-429-32920-3

* For **full contents** and more information, visit: www.routledge.com/9780367512873

2ND EDITION

Big Data and Social Science

Data Science Methods and Tools for Research and Practice



Edited by **Ian Foster, Rayid Ghani, Ron S. Jarmin, Frauke Kreuter, Julia Lane**

Series: *Chapman & Hall/CRC Statistics in the Social and Behavioral Sciences*

This classroom-tested book fills a major gap in graduate- and professional-level data science and social science education. It can be used to train a new generation of social data scientists to tackle real-world problems and improve the skills and competencies of applied social scientists and public policy practitioners. It empowers you to use the massive and rapidly growing amounts of available data to interpret economic and social activities in a scientific and rigorous manner.

Chapman & Hall
November 2020:412
Hb: 978-0-367-34187-9: **£135**
Pb: 978-0-367-56859-7: **£54.99**
eBook: 978-0-429-32438-3

* For full contents and more information, visit: www.routledge.com/9780367568597

Data Science

A First Introduction



Tiffany Timbers, Trevor Campbell, Melissa Lee

Series: *Chapman & Hall/CRC Data Science Series*

Data Science: A First Introduction focuses on using the R 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.

Chapman & Hall
July 2022:456
Hb: 978-0-367-53217-8: **£125**
Pb: 978-0-367-52468-5: **£49.99**
eBook: 978-1-003-08097-8

* For full contents and more information, visit: www.routledge.com/9780367524685

Data Science and Machine Learning

Mathematical and Statistical Methods



Dirk P. Kroese, Zdravko Botev, Thomas Taimre, Radislav Vaisman

Series: *Chapman & Hall/CRC Machine Learning & Pattern Recognition*

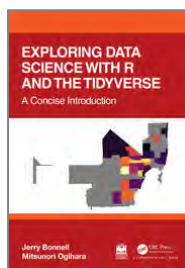
The purpose of this book is to provide an accessible, comprehensive textbook in data science and machine learning. The book will provide a solid basis in linear algebra, optimization, probability, and statistics. The main body will discuss the major topics in machine learning and data science: data manipulation, supervised and unsupervised learning, modelling of data, linear models, regression, classification, principal component analysis, deep learning, high dimensional data, regularization, kernel methods, support vector machines, etc.

Chapman & Hall
November 2019:538
Hb: 978-1-138-49253-0: **£86.99**
eBook: 978-0-367-81697-1

* For full contents and more information, visit: www.routledge.com/9781138492530

Exploring Data Science with R and the Tidyverse

A Concise Introduction



Jerry Bonnell, Mitsunori Ogiwara

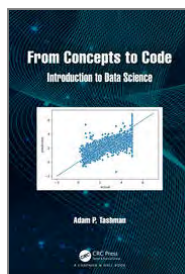
This book introduces the reader to data science using R and the tidyverse. No prerequisite knowledge is needed in college-level programming or mathematics (e.g., calculus or statistics). The book is self-contained so readers can immediately begin building data science workflows without needing to reference extensive amounts of external resources for onboarding. The contents are targeted for undergraduate students but are equally applicable to students at the graduate level and beyond. The book develops concepts using many real-world examples to motivate the reader. An exercise set is made available and designed for compatibility with automated grading tools for instructor use.

Chapman & Hall
August 2023:492
Hb: 978-1-032-32950-5: **£195**
Pb: 978-1-032-34170-5: **£76.99**
eBook: 978-1-003-32084-5

* For full contents and more information, visit: www.routledge.com/9781032341705

From Concepts to Code

Introduction to Data Science



Adam P. Tashman

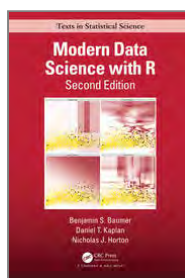
The breadth of problems that can be solved with data science is astonishing, and this book provides the required tools and skills to a broad audience. The reader takes a journey into the forms, uses, and abuses of data and models, and learns how to critically examine each step. Python coding and data 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
Hb: 978-1-032-51795-7: **£140**
Pb: 978-1-032-51798-8: **£54.99**

* For full contents and more information, visit: www.routledge.com/9781032517988

2ND EDITION

Modern Data Science with R



Benjamin S. Baumer, Daniel T. Kaplan, Nicholas J. Horton

Series: *Chapman & Hall/CRC Texts in Statistical Science*

New data technologies and database systems facilitate scraping data and merging information from different sources and formats and restructuring data into a form suitable for analysis. State-of-the-art workflow and tools foster well-documented and reproducible analysis. Modern statistical methods allow the analyst to fit and assess models as well as to undertake supervised or unsupervised learning to extract information. Contemporary data science requires tight integration of these statistics, computing, data skills, mathematics, and communication. The text is intended for readers with some background in statistics and modest prior experience in scripting and programming.

Chapman & Hall
April 2021:650
Hb: 978-0-367-19149-8: **£84.99**
eBook: 978-0-429-20071-7

* For full contents and more information, visit: www.routledge.com/9780367191498

Telling Stories with Data

With Applications in R



Rohan Alexander

Series: Chapman & Hall/CRC Data Science Series

The book equips students with the end-to-end skills needed to do data science. That means gathering, cleaning, preparing, and sharing data, then using statistical models to analyse data, writing about the results of those models, drawing conclusions from them, and finally, using the cloud to put a model into production, all done in a reproducible way. This book will achieve the goals by working through extensive case studies in terms of gathering and preparing data, and integrating ethics throughout. It is specifically designed around teaching how to write about the data and models, so aspects such as writing are explicitly covered.

Chapman & Hall

July 2023:622

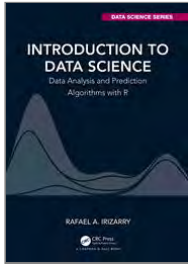
Hb: 978-1-032-13477-2: **£76.99**

eBook: 978-1-003-22940-7

* For full contents and more information, visit: www.routledge.com/9781032134772

Introduction to Data Science

Data Analysis and Prediction Algorithms with R



Rafael A. Irizarry

Series: *Chapman & Hall/CRC Data Science Series*

The book begins by going over the basics of R and the tidyverse. You learn R throughout the book, but in the first part we go over the building blocks needed to keep learning during the rest of the book.

Chapman & Hall
November 2019:743
Hb: 978-0-367-35798-6: **£84.99**
eBook: 978-0-429-34183-0

* For full contents and more information, visit: www.routledge.com/9780367357986

Statistical Foundations of Data Science



Jianqing Fan, Runze Li, Cun-Hui Zhang, Hui Zou

Series: *Chapman & Hall/CRC Data Science Series*

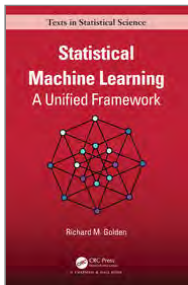
This book gives a comprehensive and systematic account of high-dimensional data analysis, including variable selection via regularization methods and sure independent feature screening methods. Offering more details on the topics than similar books, it is a valuable reference for researchers involved with model selection, variable selection, machine learning, and risk management. The book can also be used as a text for graduate and senior undergraduate students.

Chapman & Hall
August 2020:774
Hb: 978-1-466-51084-5: **£110**
eBook: 978-0-429-09628-0

* For full contents and more information, visit: www.routledge.com/9781466510845

Statistical Machine Learning

A Unified Framework



Richard Golden

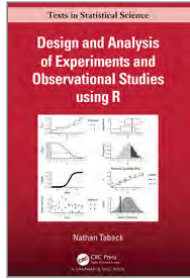
Series: *Chapman & Hall/CRC Texts in Statistical Science*

For advanced undergraduate students, graduate students, and professional. Presents a wide range of popular, disparate, and diverse machine learning algorithms within a unified theoretical framework, characterized by a collection of carefully chosen theorems from the fields of nonlinear optimization theory and mathematical statistics which respectively characterize both asymptotic behavior and generalization performance. The purpose is to teach students how to confidently apply these theorems in practice. The only required mathematical prerequisites are lower-division linear algebra, lower-division calculus, and an upper-division calculus-based course in probability theory.

Chapman & Hall
July 2020:524
Hb: 978-1-138-48469-6: **£105**
eBook: 978-1-351-05150-7

* For full contents and more information, visit: www.routledge.com/9781138484696

Design and Analysis of Experiments and Observational Studies using R



Nathan Taback

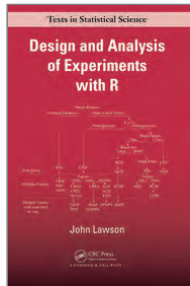
Series: Chapman & Hall/CRC Texts in Statistical Science

Introduction to Design and Analysis of Scientific Studies exposes undergraduate and graduate students to the foundations of classical experimental design and observational studies through a modern framework - The Rubin Causal Model. A causal inference framework is important in design, data collection and analysis since it provides a framework for investigators to readily evaluate study limitations and draw appropriate conclusions. R is used to implement designs and analyse the data collected.

Chapman & Hall
 April 2022:292
 Hb: 978-0-367-45685-6: **£84.99**
 eBook: 978-1-003-03369-1

* For full contents and more information, visit: www.routledge.com/9780367456856

Design and Analysis of Experiments with R



John Lawson

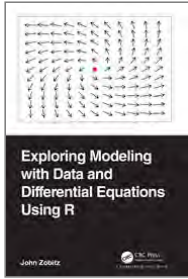
Series: Chapman & Hall/CRC Texts in Statistical Science

This text presents a unified treatment of experimental designs and design concepts commonly used in practice. It connects the objectives of research to the type of experimental design required, describes the process of creating the design and collecting the data, shows how to perform the proper analysis of the data, and illustrates the interpretation of results. R code is used to create and analyze all the example experiments, with the code examples available on the author's website.

Chapman & Hall
 December 2014:628
 Hb: 978-1-439-86813-3: **£110**
 eBook: 978-0-429-15452-2

* For full contents and more information, visit: www.routledge.com/9781439868133

Exploring Modeling with Data and Differential Equations Using R



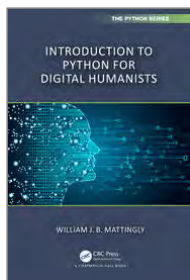
John Zobitz

The book provides a unique introduction to differential equations with applications to the biological and other natural sciences. Additionally, model parameterization and simulation of stochastic differential equations are explored, providing additional tools for model analysis and evaluation. This unified framework sits "at the intersection" of different mathematical subject areas, data science, statistics, and the natural sciences. The text throughout emphasizes data science workflows using the R statistical software program and the tidyverse constellation of packages. Only knowledge of calculus is needed.

Chapman & Hall
November 2022: 378
Hb: 978-1-032-25948-2: £76.99
eBook: 978-1-003-28697-4

* For full contents and more information, visit: www.routledge.com/9781032259482

Introduction to Python for Humanists



William Mattingly

Series: Chapman & Hall/CRC The Python Series

This book will introduce digital humanists at all levels of education to Python. It provides background and guidance on learning the Python computer programming language, and as it presumes no knowledge on the part of the reader about computers or coding concepts allows the reader to gradually learn the more complex tasks that are currently popular in the field of digital humanities. This book will be aimed at undergraduates, graduates, and faculty who are interested in learning how to use Python as a tool within their workflow, and will act as a primer for students who wish to use Python, allowing them to engage with more advanced textbooks.

Chapman & Hall
July 2023:362

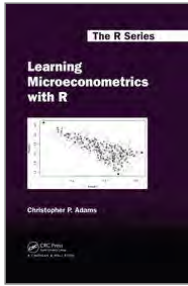
Hb: 978-1-032-37790-2: **£120**

Pb: 978-1-032-37837-4: **£45.99**

eBook: 978-1-003-34217-5

* For full contents and more information, visit: www.routledge.com/9781032378374

Learning Microeconometrics with R



Christopher P. Adams

Series: Chapman & Hall/CRC The R Series

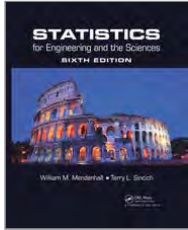
This book provides an introduction to the field of microeconometrics through the use of R. The focus is on applying current learning from the field to real world problems. It uses R to both teach the concepts of the field and show the reader how the techniques can be used. It is aimed at the general reader with the equivalent of a bachelor's degree in economics, statistics or some more technical field. It covers the standard tools of microeconometrics, OLS, instrumental variables, Heckman selection and difference in difference. In addition, it introduces bounds, factor models, mixture models and empirical Bayesian analysis.

Chapman & Hall
December 2020:398
Hb: 978-0-367-25538-1: **£84.99**
eBook: 978-0-429-28833-3

* For full contents and more information, visit: www.routledge.com/9780367255381

6TH EDITION

Statistics for Engineering and the Sciences



William M. Mendenhall, Terry L. Sincich

Designed for a two-semester introductory course, this popular text continues to teach students the basic concepts of data description and statistical inference as well as the statistical methods necessary for real-world applications. Along with updated and reorganized material, this sixth edition includes many new and updated exercises based on contemporary engineering and scientific-related studies and real data. It also offers more statistical software printouts and corresponding instructions for use that reflect the latest versions of the SAS, SPSS, and MINITAB software.

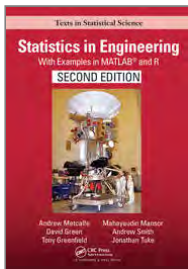
Chapman & Hall
December 2015: 1182
Hb: 978-1-498-72885-0: **£84.99**
eBook: 978-0-429-07627-5

* For full contents and more information, visit: www.routledge.com/9781498728850

2ND EDITION

Statistics in Engineering

With Examples in MATLAB® and R, Second Edition



**Andrew Metcalfe, David Green, Tony Greenfield,
Mayhayaudin Mansor, Andrew Smith, Jonathan Tuke**

This is a textbook for an undergraduate course in statistics for engineers with a minimal calculus prerequisite. The second edition differs from existing books in three main aspects: it is the only introductory statistics textbook written for engineers that uses R throughout the text, there is an emphasis on statistical methods most relevant to engineers that are illustrated with practical applications, and there is an emphasis on random number generation and simulation, all very useful features in engineering.

Chapman & Hall
June 2020: 810
Hb: 978-1-439-89547-4: **£86.99**
Pb: 978-0-367-57062-0: **£45.99**
eBook: 978-1-315-11723-2

* For full contents and more information, visit: www.routledge.com/9780367570620

Bringing Bayesian Models to Life



Mevin B. Hooten, Trevor Hefley

Bringing Bayesian Models to Life contains a comprehensive treatment of models and associated algorithms for fitting the models to data. We provide detailed and annotated R code in each chapter and apply it to fit each model we present to either real or simulated data for instructional purposes. Our code shows how to create every result and figure in the book so that readers can use and modify it for their own analyses. We provide all code and data in an organized set of directories available at the authors' websites.

CRC Press

June 2021:592

Hb: 978-0-367-19848-0: **£71.99**

Pb: 978-1-032-09241-6: **£45.99**

eBook: 978-0-429-24365-3

* For full contents and more information, visit: www.routledge.com/9781032092416

Spatio-Temporal Models for Ecologists



James Thorson, Kasper Kristensen

Series: Chapman & Hall/CRC Applied Environmental Statistics

This book seeks to introduce a minimal set of principles and numerical techniques for spatio-temporal statistics that can be used to implement a wide range of real-world ecological analyses regarding animal movement, population dynamics, community composition, causal attribution, and spatial dynamics. Techniques are showcased using real-world data from varied ecological systems, providing a toolset for hierarchical modelling of spatio-temporal processes. Spatio-Temporal Models for Ecologists is meant for graduate level students, alongside applied and academic ecologists. Step-by-step illustrations of techniques using R are provided.

Chapman & Hall

February 2024:294

Hb: 978-1-032-53101-4: **£74.99**

eBook: 978-1-003-41029-4

* For full contents and more information, visit: www.routledge.com/9781032531014

Introduction to Environmental Data Science



Jerry Davis

Series: Chapman & Hall/CRC Data Science Series

Introduction to Environmental Data Science focuses on data science methods in the R language applied to environmental research, with sections on exploratory data analysis in R including data abstraction, transformation, and visualization; spatial data analysis in vector and raster models and more. It is an ideal textbook to teach undergraduate to graduate level students in environmental science, environmental studies, geography, earth science, and biology, but can also serve as a reference for environmental professionals working in consulting, NGOs, and government agencies at the local, state, federal, and international levels.

Chapman & Hall

March 2023:402

Hb: 978-1-032-32218-6: **£76.99**

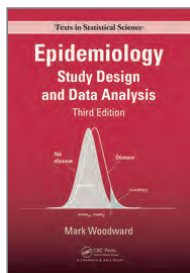
eBook: 978-1-003-31782-1

* For full contents and more information, visit: www.routledge.com/9781032322186

3RD EDITION

Epidemiology

Study Design and Data Analysis, Third Edition



Mark Woodward

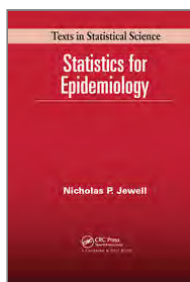
Series: Chapman & Hall/CRC Texts in Statistical Science

Updated and expanded, this popular text focuses on the quantitative aspects of epidemiological research. It shows students how statistical principles and techniques can help solve epidemiological problems. Along with more exercises and examples using both Stata and SAS, this third edition includes a new chapter on risk scores and clinical decision rules, a new chapter on computer-intensive methods, and new sections on binomial regression models, competing risk, information criteria, propensity scoring, and splines. Supporting materials are available on the book's CRC Press web page.

Chapman & Hall
December 2013:898
Hb: 978-1-439-83970-6: **£84.99**
eBook: 978-0-429-19626-3

* For full contents and more information, visit: www.routledge.com/9781439839706

Statistics for Epidemiology



Nicholas P. Jewell

Series: Chapman & Hall/CRC Texts in Statistical Science

Written by one of the top biostatisticians in the field, *Statistics for Epidemiology* fills a substantial niche by explaining the ideas behind the analysis of epidemiological data without requiring a high level of mathematics and without resorting to a 'cookbook' format. It covers the basic material for analyzing data that arise from simple epidemiological studies, including case-control and matched studies. Methodologically, it describes stratification techniques for handling confounding and interaction and the logistic regression model. The author uses a case-study approach, following a few simple examples through several method chapters rather than introducing a different example at each stage.

Chapman & Hall
August 2003:350
Hb: 978-1-584-88433-0: **£110**
eBook: 978-0-429-17602-9

* For full contents and more information, visit: www.routledge.com/9781584884330

Algorithmic Trading and Quantitative Strategies



Raja Velu, Maxence Hardy, Daniel Nehren

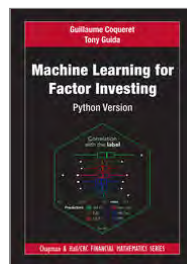
This book brings together the literature in main stream finance and the tools presented in quantitative finance with a focus on what is being practiced in industry. The author begins with the economic theory behind price formation and tests the model that results from the theory and suggests algorithms to detect and exploit the anomalies. The book provides a comprehensive description of the methodologies both published and unpublished, but being practiced. The strength of the book is the intuitive approach to developing algorithms – based on statistical techniques, machine learning ideas, and optimization methods.

Chapman & Hall
August 2020:450
Hb: 978-1-498-73716-6: **£105**
eBook: 978-0-429-18394-2

* For full contents and more information, visit: www.routledge.com/9781498737166

Machine Learning for Factor Investing

Python Version



Guillaume Coqueret, Tony Guida

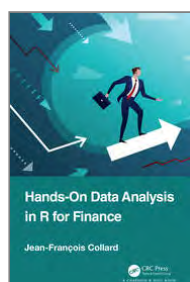
Series: *Chapman and Hall/CRC Financial Mathematics Series*

Machine learning (ML) is progressively reshaping the fields of quantitative finance and algorithmic trading. ML tools are increasingly adopted by hedge funds and asset managers, notably for alpha signal generation and stocks selection. The technicality of the subject can make it hard for non-specialists to join the bandwagon, as the jargon and coding requirements may seem out-of-reach. This book bridges this gap. It provides a comprehensive tour of modern ML-based investment strategies that rely on firm characteristics. Machine learning for factor investing: Python version deepens your financial and technical expertise.

Chapman & Hall
August 2023:358
Hb: 978-0-367-63974-7: **£175**
Pb: 978-0-367-63972-3: **£68.99**
eBook: 978-1-003-12159-6

* For full contents and more information, visit: www.routledge.com/9780367639723

Hands-On Data Analysis in R for Finance



Jean-Francois Collard

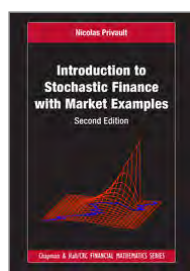
This textbook is an introduction to data science/data analysis applied to finance, using R and its most recent and freely available extension libraries. The target audience is undergrad data science, finance and graduate students, and practitioners or professionals who need a desk reference. This content has been tested in actual university classes, and makes the reader proficient in advanced methods such as machine learning, time series analysis and principal component analysis. It assumes no prior knowledge of R, providing comprehensive explanations on how to use the most recent resources, like financial and statistics libraries or open databases on the internet.

Chapman & Hall
November 2022:414
Hb: 978-1-032-34097-5: **£76.99**
eBook: 978-1-003-32055-5

* For full contents and more information, visit: www.routledge.com/9781032340975

2ND EDITION

Introduction to Stochastic Finance with Market Examples



Nicolas Privault

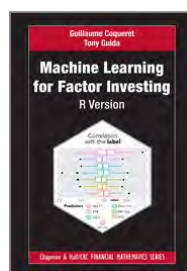
Series: *Chapman and Hall/CRC Financial Mathematics Series*

This book presents an introduction to pricing and hedging in discrete and continuous time financial models, emphasizing both analytical and probabilistic methods. It demonstrates both the power and limitations of mathematical models in finance, covering the basics of stochastic calculus for finance, and details the techniques required to model the time evolution of risky assets. With abundant exercises, problems with complete solutions, graphs and figures, and R coding examples, the book is primarily aimed at advanced undergraduate and graduate students as well as researchers and professionals in the field of applied mathematics, financial engineering, and economics.

Chapman & Hall
December 2022:662
Hb: 978-1-032-28826-0: **£91.99**
eBook: 978-1-003-29867-0

* For full contents and more information, visit: www.routledge.com/9781032288260

Machine Learning for Factor Investing: R Version



Guillaume Coqueret, Tony Guida

Series: *Chapman and Hall/CRC Financial Mathematics Series*

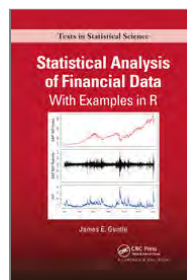
The aim of the book is to give an interpretation of ML tools through the lens of factor investing. Concepts illustrated with examples on the same (public) dataset throughout the book. Provides code samples and the corresponding results so that anybody can reproduce the steps.

Chapman & Hall
September 2020:342
Hb: 978-0-367-47322-8: **£175**
Pb: 978-0-367-54586-4: **£68.99**
eBook: 978-1-003-03485-8

* For full contents and more information, visit: www.routledge.com/9780367545864

Statistical Analysis of Financial Data

With Examples In R



James Gentle

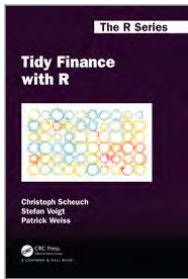
Series: *Chapman & Hall/CRC Texts in Statistical Science*

The book is about financial data, in particular, security prices and prices of derivatives, and the statistical methods for analyzing such data. It covers statistical models of branching processes, linear discrete time series models, and continuous-time stochastic models, all at an intermediate level (advanced undergraduate, or beginning graduate). The book provides a brief introduction to R and uses R extensively to get and analyze data. Actual financial datasets are discussed and analyzed.

CRC Press
September 2021:666
Hb: 978-1-138-59949-9: **£105**
Pb: 978-1-032-17346-7: **£45.99**
eBook: 978-0-429-48560-2

* For full contents and more information, visit: www.routledge.com/9781032173467

Tidy Finance with R



Christoph Scheuch, Stefan Voigt, Patrick Weiss

Series: Chapman & Hall/CRC The R Series

This textbook shows how to bring theoretical concepts from finance and econometrics to the data. Focusing on coding and data analysis with R, we show how to conduct research in empirical finance from scratch. We start by introducing the concepts of tidy data and coding principles using the tidyverse family of R packages. The empirical applications range from key concepts of empirical asset pricing to modeling and machine learning applications (fixed effects estimation, clustering standard errors, difference-in-difference estimators, ridge regression, Lasso, Elastic net, random forests, neural networks) and portfolio optimization techniques.

Chapman & Hall

April 2023: 268

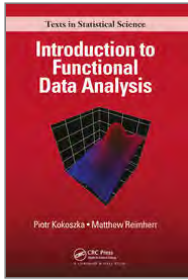
Hb: 978-1-032-38933-2: **£155**

Pb: 978-1-032-38934-9: **£61.99**

eBook: 978-1-003-34753-8

* For full contents and more information, visit: www.routledge.com/9781032389349

Introduction to Functional Data Analysis



Piotr Kokoszka, Matthew Reimherr

The book will provide an introduction to functional data analysis (FDA). This field of statistics has seen rapid development over the last two–three decades. At present, FDA has reached a certain maturity with its central ideas and methods crystalized; it is now generally viewed as a fundamental subfield of statistics. FDA methods have been applied to many fields of science, business and engineering. While new theoretical results, methodological tools, and novel applications are still being reported, the literature has become so vast that an introductory account will be useful to students and researchers seeking an accessible and sufficiently comprehensive introduction to the subject.

Chapman & Hall
June 2021: 306

Hb: 978-1-498-74634-2: **£84.99**

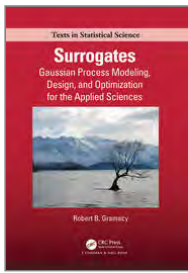
Pb: 978-1-032-09659-9: **£45.99**

eBook: 978-1-315-11741-6

* For full contents and more information, visit: www.routledge.com/9781032096599

Surrogates

Gaussian Process Modeling, Design, and Optimization for the Applied Sciences



Robert B. Gramacy

Surrogates: a graduate textbook, or professional handbook, on topics at the interface between machine learning, spatial statistics, computer simulation, meta-modeling (i.e., emulation), design of experiments, and optimization. Experimentation through simulation, "human out-of-the-loop" statistical support (focusing on the science), management of dynamic processes, online and real-time analysis, automation, and practical application are at the forefront.

Chapman & Hall

December 2021:560

Hb: 978-0-367-41542-6: **£105**

Pb: 978-1-032-24255-2: **£39.99**

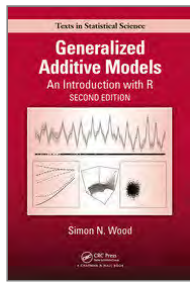
eBook: 978-0-367-81549-3

* For full contents and more information, visit: www.routledge.com/9781032242552

2ND EDITION

Generalized Additive Models

An Introduction with R, Second Edition

**Simon N. Wood***Series: Chapman & Hall/CRC Texts in Statistical Science*

The first edition of this book has established itself as one of the leading references on generalized additive models (GAMs), and the only book on the topic to be introductory in nature with a wealth of practical examples and software implementation. It is self-contained, providing the necessary background in linear models, linear mixed models, and generalized linear models (GLMs), before presenting a balanced treatment of the theory and applications of GAMs and related models. The author bases his approach on a framework of penalized regression splines, and while firmly focused on the practical aspects of GAMs, discussions include fairly full explanations of the theory underlying the methods. Use of R software helps explain the theory and illustrates the practical application of the methodology. Each chapter contains an extensive set of exercises, with solutions in an appendix or in the book's R data package gamair, to enable use as a course text or for self-study.

Chapman & Hall

May 2017:496

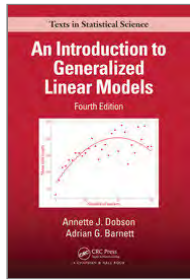
Hb: 978-1-498-72833-1: **£76.99**

eBook: 978-1-315-37027-9

* For full contents and more information, visit: www.routledge.com/9781498728331

4TH EDITION

An Introduction to Generalized Linear Models



Annette J. Dobson, Adrian G. Barnett

Series: Chapman & Hall/CRC Texts in Statistical Science

This book provides a cohesive framework for statistical modelling, with an emphasis on numerical and graphical methods. This new edition of a bestseller has been updated with new sections on non-linear associations, strategies for model selection, and a Postface on good statistical practice. Like its predecessor, it presents the theoretical background of generalized linear models (GLMs) before focusing on methods for analyzing particular kinds of data. It covers Normal, Poisson, and Binomial distributions; linear regression models; classical estimation and model fitting methods; and frequentist methods of statistical inference. After forming this foundation, the authors explore multiple linear regression, analysis of variance (ANOVA), logistic regression, log-linear models, survival analysis, multilevel modeling, Bayesian models, and Markov chain Monte Carlo (MCMC) methods.

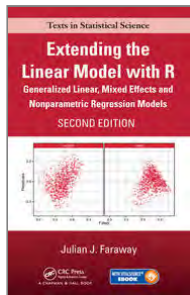
Chapman & Hall
April 2018:392
Hb: 978-1-138-74168-3: £155
Pb: 978-1-138-74151-5: £71.99
eBook: 978-1-315-18278-0

* For full contents and more information, visit: www.routledge.com/9781138741515

2ND EDITION

Extending the Linear Model with R

Generalized Linear, Mixed Effects and Nonparametric Regression Models, Second Edition



Julian J. Faraway

Series: Chapman & Hall/CRC Texts in Statistical Science

This second edition of a bestseller takes advantage of the greater functionality now available in R and substantially revises and adds several topics. It expands coverage of binary and binomial responses, incorporates many new sections, and adds a chapter on the Bayesian analysis of mixed effect models. It also revamps the R code throughout and updates the exercises, with solutions now included. The text explains data analysis using real examples and includes all the R commands necessary to reproduce the analyses.

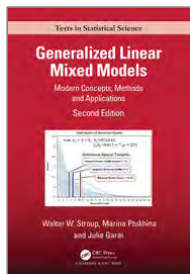
Chapman & Hall
March 2016:414
Hb: 978-1-498-72096-0: £86.99
eBook: 978-1-315-38272-2

* For full contents and more information, visit: www.routledge.com/9781498720960

2ND EDITION

Generalized Linear Mixed Models

Modern Concepts, Methods and Applications



Walter W. Stroup, Marina Ptukhina, Julie Garai

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.

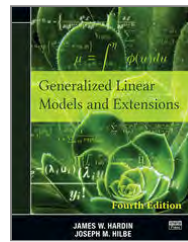
Chapman & Hall
May 2024:668
Hb: 978-1-498-75556-6: £74.99

* For full contents and more information, visit: www.routledge.com/9781498755566

4TH EDITION

Generalized Linear Models and Extensions

Fourth Edition



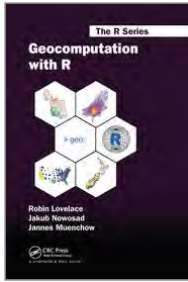
James W. Hardin, Joseph M. Hilbe

Generalized linear models (GLMs) extend linear regression to models with a non-Gaussian, or even discrete, response. In this text, Hardin and Hilbe thoroughly cover GLMs both theoretically and computationally. Theoretical discussions include properties of distributions, maximum likelihood and iteratively reweighted least-squares estimations, estimation of standard errors, and model diagnostics. The authors also demonstrate how to fit models for continuous, binary, count, ordinal, and categorical outcomes using GLM and other Stata commands. New in the fourth edition are introductions to multivariate models and Bayesian analysis and examples of creating synthetic data for GLMs.

Stata Press
April 2018:598
Pb: 978-1-597-18225-6: £65.99

* For full contents and more information, visit: www.routledge.com/9781597182256

Geocomputation with R



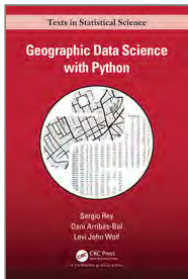
Robin Lovelace, Jakub Nowosad, Janes Muenchow

This book presents a vision for an introductory and accessible textbook on geographic data analysis, modelling, and visualisation with R. The discipline of Geography captures each of these things, as well as content to get R beginners up-to-speed with R in general.

Chapman & Hall
December 2020:354
Hb: 978-1-138-30451-2: **£76.99**
Pb: 978-0-367-67057-3: **£45.99**
eBook: 978-0-203-73005-8

* For full contents and more information, visit: www.routledge.com/9780367670573

Geographic Data Science with Python



Sergio Rey, Dani Arribas-Bel, Levi John Wolf

Series: Chapman & Hall/CRC Texts in Statistical Science

This book provides the tools, the methods, and the theory to meet the challenges of contemporary data science applied to geographic problems and data. In the new world of pervasive, large, frequent, and rapid data, there are new opportunities to understand and analyze the role of geography in everyday life. Geographic Data Science with Python introduces a new way of thinking about analysis, by using geographical and computational reasoning. Intended for data scientists, GIScientists, and geographers, the material provided in this book is of interest due to the manner in which it presents geospatial data, methods, tools, and practices in this new field.

Chapman & Hall
June 2023:410
Hb: 978-0-367-26311-9: **£135**
Pb: 978-1-032-44595-3: **£49.99**
eBook: 978-0-429-29250-7

* For full contents and more information, visit: www.routledge.com/9781032445953

Geographic Data Science with R

Visualizing and Analyzing Environmental Change



Michael C. Wimberly

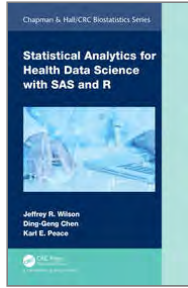
Series: Chapman & Hall/CRC Data Science Series

The purpose of this book is to provide a series of tutorials aimed at teaching good practices for using geospatial data to address problems in environmental geography. Fundamental techniques for processing and visualizing tabular, vector, and raster data are introduced through a series of practical examples followed by case studies that combine multiple types of data to address more complex problems. The book will have a broad audience. Students and professionals can use it as a workbook to learn high-level techniques for geospatial data processing and analysis with R. It is designed to be accessible to readers who have at least some knowledge of coding.

Chapman & Hall
May 2023:310
Hb: 978-1-032-34771-4: **£76.99**
eBook: 978-1-003-32619-9

* For full contents and more information, visit: www.routledge.com/9781032347714

Statistical Analytics for Health Data Science with SAS and R



Jeffrey Wilson, Ding-Geng Chen, Karl E. Peace

Series: Chapman & Hall/CRC Biostatistics Series

This book is aimed to compile typical fundamental to advanced statistical methods to be used for health data sciences. This book promotes the applications to health and health-related data. The data and computing programs will be available to facilitate readers' learning experience. The primary readers would be applied data scientists and practitioners in any field of data science, applied statistical analysts and scientists in public health, academic researchers, and graduate students in statistics and biostatistics. The secondary readers would be R&D professionals/practitioners in industry and governmental agencies. This book can be used for both teaching and applied research.

Chapman & Hall

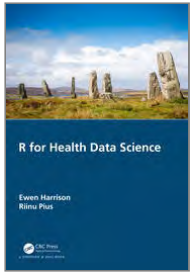
March 2023:280

Hb: 978-1-032-32562-0: **£76.99**

eBook: 978-1-003-31567-4

* For full contents and more information, visit: www.routledge.com/9781032325620

R for Health Data Science



Ewen Harrison, Riinu Pius

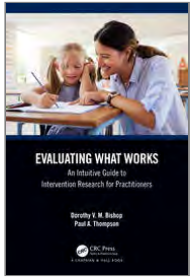
In this age of information, the manipulation, analysis, and interpretation of data has become a fundamental part of professional life. From the understanding of disease and the development of new treatments, to the diagnosis and management of individual patients, the use of data and technology is now an integral part of the business of healthcare. Those working in healthcare interact daily with data, often without realising it. The conversion of this avalanche of information to useful knowledge is essential for high quality patient care. R for Health Data Analysis includes everything a healthcare professional needs to go from R Novice to R Guru.

Chapman & Hall
November 2020:364
Hb: 978-0-367-42832-7: **£175**
Pb: 978-0-367-42819-8: **£68.99**
eBook: 978-0-367-85542-0

* For full contents and more information, visit: www.routledge.com/9780367428198

Evaluating What Works

An Intuitive Guide to Intervention Research for Practitioners



Dorothy V. M. Bishop, Paul Thompson

Those who work in allied health professions and education aim to make people's lives better. Often, however, it is hard to know how effective this work has been: would change have occurred if there was no intervention? Is it possible we are doing more harm than good? To answer these questions and develop a body of knowledge about what works, we need to evaluate interventions. This book is intended for those with little or no background in statistics, to give them the confidence to approach statistics in published literature with a critical eye, recognise when specialist advice is needed, and give them the ability to communicate more effectively with statisticians.

Chapman & Hall

December 2023:234

Hb: 978-1-032-59120-9: **£115**

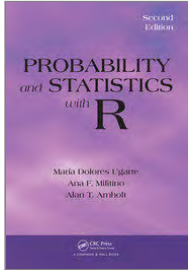
Pb: 978-1-032-59061-5: **£44.99**

eBook: 978-1-003-45307-9

* For full contents and more information, visit: www.routledge.com/9781032590615

2ND EDITION

Probability and Statistics with R



Maria Dolores Ugarte, Ana F. Militino, Alan T. Arnholt

Since the publication of the popular first edition, the contributed R packages on CRAN have increased from around 1,000 to over 6,000. This second edition explores how some of these new packages make analysis easier and more intuitive as well as create more visually pleasing graphs. Along with adding new examples and exercises, this edition improves the existing examples, problems, concepts, data, and functions. Data sets, R functions, and more are available online.

Chapman & Hall
July 2015:984
Hb: 978-1-466-50439-4: £96.99
eBook: 978-0-429-09614-3

* For full contents and more information, visit: www.routledge.com/9781466504394

Project-Based R Companion to Introductory Statistics



Chelsea Myers

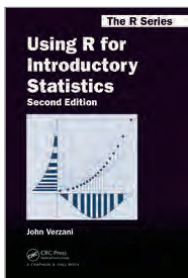
One of the most difficult transitions students face when beginning a first "real" job after college is moving beyond solving the well-designed problems found in textbooks to tackling the messy, complex problems they face in the real world. *Statistics: A Project-Based Approach Using R* is designed as a companion text for undergraduate students who wish to learn basic R programming and gain experience analyzing data from larger, real-world projects. Topics covered include working with R and RStudio, basic descriptive statistics, two-way tables, simple linear regression and hypothesis testing for means and proportions.

Chapman & Hall
December 2020:183
Hb: 978-0-367-68734-2: £130
Pb: 978-0-367-26208-2: £48.99
eBook: 978-0-429-29200-2

* For full contents and more information, visit: www.routledge.com/9780367262082

2ND EDITION

Using R for Introductory Statistics



John Verzani

Series: Chapman & Hall/CRC The R Series

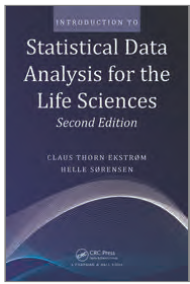
The second edition of a bestselling textbook, *Using R for Introductory Statistics* guides students through the basics of R, helping them overcome the sometimes steep learning curve. The author does this by breaking the material down into small, task-oriented steps. The second edition maintains the features that made the first edition so popular, while updating data, examples, and changes to R in line with the current version.

Chapman & Hall
June 2014:518
Hb: 978-1-466-59073-1: £61.99
eBook: 978-1-315-37308-9

* For full contents and more information, visit: www.routledge.com/9781466590731

2ND EDITION

Introduction to Statistical Data Analysis for the Life Sciences



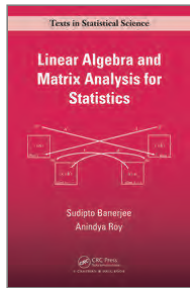
Claus Thorn Ekstrom, Helle Sørensen

Using R throughout, this popular textbook presents the right balance of data examples, statistical theory, and computing to teach introductory statistics to students in the life sciences. Expanded with over 100 more pages, this edition includes a new chapter on non-linear regression models and a new chapter that contains examples of complete data analyses. It also incorporates additional exercises in most chapters as well as a summary of statistical formulas related to the specific designs used to teach the statistical concepts.

Chapman & Hall
November 2014: 526
Hb: 978-1-138-44574-1: **£185**
Pb: 978-1-482-23893-8: **£61.99**
eBook: 978-0-429-06942-0

* For full contents and more information, visit: www.routledge.com/9781482238938

Linear Algebra and Matrix Analysis for Statistics



Sudipto Banerjee, Anindya Roy

Series: Chapman & Hall/CRC Texts in Statistical Science

Assuming no prior knowledge of linear algebra, this self-contained text offers a gradual exposition to linear algebra without sacrificing the rigor of the subject. It presents both the vector space approach and the canonical forms in matrix theory. The book covers important topics in linear algebra that are useful for statisticians, including the concept of rank, the fundamental theorem of linear algebra, projectors, and quadratic forms. It also provides an extensive collection of exercises on theoretical concepts and numerical computations.

Chapman & Hall

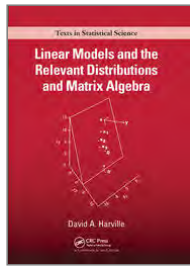
June 2014: 582

Hb: 978-1-420-09538-8: **£82.99**

eBook: 978-0-429-17413-1

* For full contents and more information, visit: www.routledge.com/9781420095388

Linear Models and the Relevant Distributions and Matrix Algebra



David A. Harville

The book describes the use of linear statistical models as a basis for statistical inference and the theoretical underpinnings of the resultant inferential procedures. It covers the relevant distributions and matrix algebra that is relatively complete and self-contained. Derivations or proofs are provided for almost all results; some of these are not readily available from other sources. The book includes coverage of some topics that are typically covered less extensively or not covered at all in other books on linear models; among these topics are prediction, multiple-comparison procedures for controlling the FDR, and spherical/elliptical distributions.

Chapman & Hall
June 2020:538

Hb: 978-1-138-57833-3: **£130**

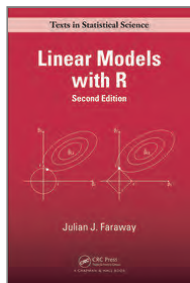
Pb: 978-0-367-57203-7: **£38.99**

eBook: 978-1-351-26468-6

* For full contents and more information, visit: www.routledge.com/9780367572037

2ND EDITION

Linear Models with R



Julian J. Faraway

Series: Chapman & Hall/CRC Texts in Statistical Science

Like its widely praised, best-selling predecessor, this second edition explains how to use linear models in physical science, engineering, social science, and business applications. The material on interpreting linear models now distinguishes the main applications of prediction and explanation and introduces elementary notions of causality. This edition also covers QR decomposition, splines, additive models, Lasso, multiple imputation, and false discovery rates. It extensively uses R's ggplot2 graphics package in addition to base graphics.

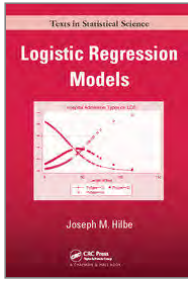
Chapman & Hall
July 2014:286

Hb: 978-1-439-88733-2: **£86.99**

eBook: 978-0-429-11171-6

* For full contents and more information, visit: www.routledge.com/9781439887332

Logistic Regression Models



Joseph M. Hilbe

Series: Chapman & Hall/CRC Texts in Statistical Science

Logistic regression is increasingly being taught in individual short courses or as a major component of a course on categorical data analysis. Based on a successful short course taught by the author, this text provides an overview of logistic regression models with a particular emphasis on their practical application. It covers the basic derivation of logistic models, their interpretation, various goodness-of-fit tests, overdispersion and how it can be handled, how models can be ill-fitted, and several extended models. Full of examples of real data taken from the medical and social sciences, the text implements the examples using Stata and R.

Chapman & Hall

May 2017: 656

Hb: 978-1-420-07575-5: **£155**

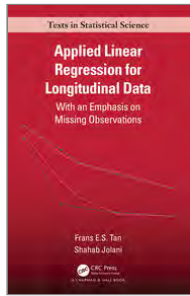
Pb: 978-1-138-10671-0: **£54.99**

eBook: 978-0-429-14913-9

* For full contents and more information, visit: www.routledge.com/9781138106710

Applied Linear Regression for Longitudinal Data

With an Emphasis on Missing Observations



Frans E.S. Tan, Shahab Jolani

Series: Chapman & Hall/CRC Texts in Statistical Science

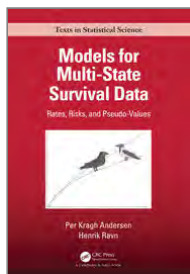
This book introduces best practices in longitudinal data analysis at intermediate level, with a minimum number of formulas without sacrificing depths. It meets the need to understand statistical concepts of longitudinal data analysis by visualizing important techniques instead of using abstract mathematical formulas. Different solutions such as multiple imputation are explained conceptually and consequences of missing observations are clarified using visualization techniques. It is the ideal companion for researcher and students in epidemiological, health, and social and behavioral sciences working with longitudinal studies without a mathematical background.

Chapman & Hall
December 2022:248
Hb: 978-0-367-63431-5: **£91.99**
eBook: 978-1-003-12138-1

* For **full contents** and more information, visit: www.routledge.com/9780367634315

Models for Multi-State Survival Data

Rates, Risks, and Pseudo-Values



Per Kragh Andersen, Henrik Ravn

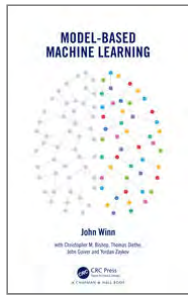
Series: Chapman & Hall/CRC Texts in Statistical Science

Multi-state models provide a statistical framework for studying longitudinal data on subjects when focus is on the occurrence of events that the subjects may experience over time. They find application particularly in biostatistics, medicine, and public health. The book includes mathematical detail which can be skipped by readers more interested in the practical examples. It is aimed at biostatisticians and at readers with an interest in the topic having a more applied background, such as epidemiology.

Chapman & Hall
October 2023:292
Hb: 978-0-367-14002-1: **£76.99**
eBook: 978-0-429-02968-4

* For **full contents** and more information, visit: www.routledge.com/9780367140021

Model-Based Machine Learning



John Winn

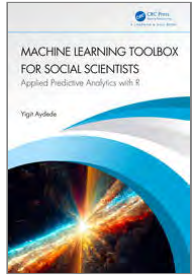
Machine learning is being applied to a growing variety of problems in a variety of domains. A fundamental challenge when using machine learning is connecting the abstract mathematics of a machine learning technique to real world problems. This book tackles this through model-based machine learning, focusing on understanding the assumptions encoded in a machine learning system and their impact on the behaviour of the system. The key ideas of model-based machine learning are introduced through case studies involving real-world applications. It aims not just to explain machine learning methods, but also how to create, debug, and evolve them to solve a problem.

Chapman & Hall
October 2023:468
Hb: 978-1-498-75681-5: **£71.99**
eBook: 978-0-429-19268-5

* For full contents and more information, visit: www.routledge.com/9781498756815

Machine Learning Toolbox for Social Scientists

Applied Predictive Analytics with R



Yigit Aydede

Machine Learning Toolbox for Social Scientists covers predictive methods with complementary statistical "tools" that make it mostly self-contained. The inferential statistics is the traditional framework for most data analytics courses in social science and business fields, especially in Economics and Finance. The new organization that this book offers goes beyond standard machine learning code applications, providing intuitive backgrounds for new predictive methods that social science and business students can follow. The modern statistical methods the book provides allows it to be effectively used in teaching in the social science and business fields.

Chapman & Hall
September 2023:600
Hb: 978-1-032-46395-7: **£76.99**
eBook: 978-1-003-38150-1

* For full contents and more information, visit: www.routledge.com/9781032463957

Foundations of Statistics for Data Scientists

With R and Python



Alan Agresti, Maria Kateri

Series: Chapman & Hall/CRC Texts in Statistical Science

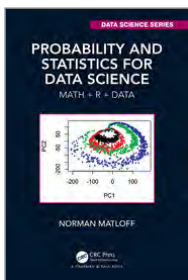
Designed as a textbook for a one or two-term introduction to mathematical statistics for students training to become data scientists, *Foundations of Statistics for Data Scientists: With R and Python* is an in-depth presentation of the topics in statistical science

Chapman & Hall
November 2021:486
Hb: 978-0-367-74845-6: **£84.99**
eBook: 978-1-003-15983-4

* For full contents and more information, visit: www.routledge.com/9780367748456

Probability and Statistics for Data Science

Math + R + Data



Norman Matloff

Series: Chapman & Hall/CRC Data Science Series

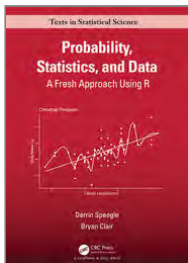
This text is designed for a one-semester junior/senior/graduate-level calculus-based course on probability and statistics, aimed specifically at data science students (including computer science). In addition to calculus, the text assumes basic knowledge of matrix algebra and rudimentary computer programming. The key difference is the consistently applied approach, pervasive throughout the book. The overriding goal is to stay mathematically precise, yet emphasize intuition, modeling and applications.

Chapman & Hall
June 2019:444
Hb: 978-0-367-26093-4: **£155**
Pb: 978-1-138-39329-5: **£58.99**
eBook: 978-0-429-40186-2

* For full contents and more information, visit: www.routledge.com/9781138393295

Probability, Statistics, and Data

A Fresh Approach Using R



Darrin Speegle, Bryan Clair

Series: Chapman & Hall/CRC Texts in Statistical Science

This book is a first course in probability and statistics using R. The book assumes a mathematical background of Calculus II, though much of the book can be read with a much lower level of mathematics. The book incorporates R throughout all sections via simulations, data wrangling and/or data visualization. Tidyverse and base R tools are interspersed, depending on which is better for a particular job. For most visualizations, ggplot is used, and for most data wrangling, dplyr is used.

Chapman & Hall
November 2021:512
Hb: 978-0-367-43667-4: **£84.99**
eBook: 978-1-003-00489-9

* For full contents and more information, visit: www.routledge.com/9780367436674

2ND EDITION

Statistical Methods for Handling Incomplete Data



Jae Kwang Kim, Jun Shao

Due to recent theoretical findings and advances in statistical computing, there has been a rapid development of techniques and applications in the area of missing data analysis. *Statistical Methods for Handling Incomplete Data* covers the most up-to-date statistical theories and computational methods for analyzing incomplete data. The book is primarily aimed at researchers and graduate students from statistics, and could be used as a reference by applied researchers with a good quantitative background. It includes many real data examples and simulated examples to help readers understand the methodologies.

Chapman & Hall
January 2024: 380

Hb: 978-0-367-28054-3: **£99.99**

Pb: 978-1-032-11813-0: **£44.99**

eBook: 978-0-429-32174-0

* For full contents and more information, visit: www.routledge.com/9781032118130

2ND EDITION

Multivariate Analysis for the Behavioral Sciences, Second Edition



Kimmo Vehkalahti, Brian S. Everitt

Multivariate Analysis for the Behavioral Sciences, Second Edition is designed to show how a variety of statistical methods can be used to analyse data collected by psychologists and other behavioral scientists. Assuming some familiarity with introductory statistics, the book begins by briefly describing a variety of study designs used in the behavioral sciences, and the concept of models for data analysis. The contentious issues of p-values and confidence intervals are also discussed in the introductory chapter.

CRC Press

September 2020:438

Hb: 978-0-815-38515-8: **£77.99**

Pb: 978-0-367-65675-1: **£46.99**

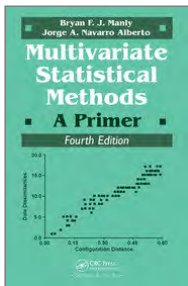
eBook: 978-1-351-20227-5

* For full contents and more information, visit: www.routledge.com/9780367656751

4TH EDITION

Multivariate Statistical Methods

A Primer, Fourth Edition



Jorge A. Navarro

Multivariate Statistical Methods: A Primer provides an introductory overview of multivariate methods without getting too deep into the mathematical details. This fourth edition is a revised and updated version of this bestselling introductory textbook. It retains the clear and concise style of the previous editions of the book and focuses on examples from biological and environmental sciences. The major update with this edition is that R code has been included for each of the analyses described, although in practice any standard statistical package can be used.

Chapman & Hall

October 2016:269

Hb: 978-1-138-46942-6: **£185**

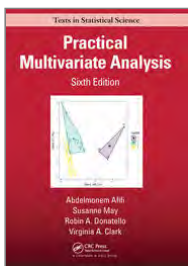
Pb: 978-1-498-72896-6: **£53.99**

eBook: 978-1-315-38213-5

* For full contents and more information, visit: www.routledge.com/9781498728966

6TH EDITION

Practical Multivariate Analysis



Abdelmonem Afifi, Susanne May, Robin Donatello, Virginia A. Clark

This is the sixth edition of a popular textbook on multivariate analysis. Well-regarded for its practical and accessible approach, with excellent examples and good guidance on computing, the book is particularly popular for teaching outside statistics, i.e. in epidemiology, social science, business, etc. The sixth edition has been updated with a new chapter on data visualization, and many new updates and references throughout. This new edition will enable the book to continue as one of the leading textbooks in the area, particularly for non-statisticians.

Chapman & Hall

June 2021:434

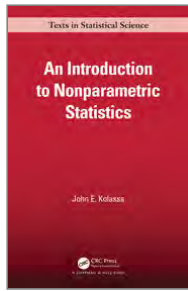
Hb: 978-1-138-70222-6: **£86.99**

Pb: 978-1-032-08847-1: **£45.99**

eBook: 978-1-315-20373-7

* For full contents and more information, visit: www.routledge.com/9781032088471

An Introduction to Nonparametric Statistics



John E. Kolassa

Series: Chapman & Hall/CRC Texts in Statistical Science

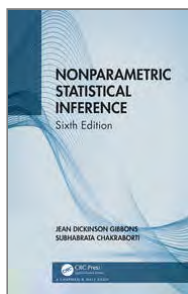
This book presents the theory and practice of non-parametric statistics, with an emphasis on motivating principals. The course is a combination of traditional rank based methods and more computationally-intensive topics like density estimation, kernel smoothers in regression, and robustness. The text is aimed at MS students.

Chapman & Hall
September 2020:224
Hb: 978-0-367-19484-0: **£84.99**
eBook: 978-0-429-20275-9

* For **full contents** and more information, visit: www.routledge.com/9780367194840

6TH EDITION

Nonparametric Statistical Inference



Jean Dickinson Gibbons, Subhabrata Chakraborti

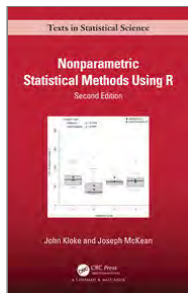
Since its first publication in 1971, Nonparametric Statistical Inference has been widely regarded as the source for learning about nonparametrics. The sixth edition carries on this tradition and incorporates computer solutions based on R and has been thoroughly revised and rewritten to make it more readable and reader-friendly. All of the R solutions are new and make this book much more useful for applications in the modern times. It has been updated throughout and contains 100 new citations, including some of the most recent, to make it more current and useful for researchers.

Chapman & Hall
December 2020:694
Hb: 978-1-138-08744-6: **£105**
eBook: 978-1-315-11047-9

* For **full contents** and more information, visit: www.routledge.com/9781138087446

2ND EDITION

Nonparametric Statistical Methods Using R



John Kloke, Joseph McKean

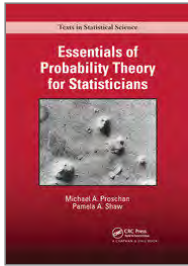
Series: Chapman & Hall/CRC Texts in Statistical Science

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: **£66.99**

* For **full contents** and more information, visit: www.routledge.com/9780367651350

Essentials of Probability Theory for Statisticians



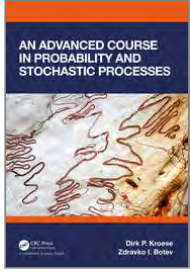
Michael A. Proschan, Pamela A. Shaw

This text provides graduate students with a rigorous treatment of probability theory, with an emphasis on results central to theoretical statistics. It presents classical probability theory motivated with illustrative examples in biostatistics, such as outlier tests, monitoring clinical trials, and using adaptive methods to make design changes based on accumulating data. In addition, counterexamples further clarify nuances in meaning and expose common fallacies in logic. The authors explain different methods of proofs and show how they are useful for establishing classic probability results.

Chapman & Hall
December 2019:344
Hb: 978-1-498-70419-9: **£84.99**
Pb: 978-0-367-87163-5: **£56.99**
eBook: 978-1-315-37057-6

* For **full contents** and more information, visit: www.routledge.com/9780367871635

An Advanced Course in Probability and Stochastic Processes



Dirk P. Kroese, Zdravko Botev

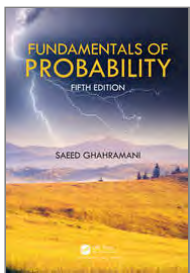
An Advanced Course in Probability and Stochastic Processes provides a modern and rigorous treatment of probability theory and stochastic processes at an upper undergraduate and graduate level. Starting with the foundations of measure theory, this book introduces the key concepts of probability theory in an accessible way, providing full proofs and extensive examples and illustrations. Fundamental stochastic processes like Gaussian processes, Poisson random measures, Lévy processes, Markov processes, and Itô processes are explored in considerable depth. This book is meant for students and researchers who have a solid mathematical background.

Chapman & Hall
December 2023:378
Hb: 978-1-032-32046-5: **£89.99**
eBook: 978-1-003-31501-8

* For full contents and more information, visit: www.routledge.com/9781032320465

5TH EDITION

Fundamentals of Probability



Saeed Ghahramani

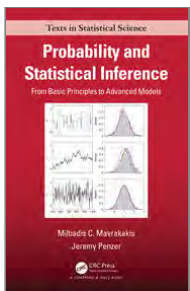
This one- or two-term calculus-based basic probability text is written for majors in mathematics, physical sciences, engineering, statistics, actuarial science, business and finance, operations research, and computer science. It presents probability in a natural way: through interesting and instructive 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
May 2024:704
Hb: 978-1-032-36608-1: **£110**
eBook: 978-0-429-45795-1

* For full contents and more information, visit: www.routledge.com/9781032366081

Probability and Statistical Inference

From Basic Principles to Advanced Models



Miltiadis C. Mavroukakis, Jeremy Penzer

Series: Chapman & Hall/CRC Texts in Statistical Science

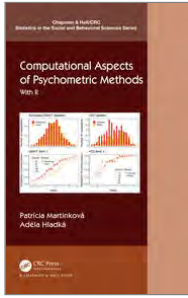
This book covers aspects of probability, distribution theory, and inference that are fundamental to a proper understanding of data analysis and statistical modelling. It presents these topics in an accessible manner without sacrificing mathematical rigour, bridging the gap between the many excellent introductory books and the more advanced, graduate-level texts. The book introduces and explores techniques that are relevant to modern practitioners, while being respectful to the history of statistical inference. It seeks to provide a thorough grounding in both the theory and application of statistics, with even the more abstract parts placed in the context of a practical setting.

Chapman & Hall
September 2022:444
Hb: 978-1-584-88939-7: **£120**
Pb: 978-0-367-74912-5: **£45.99**
eBook: 978-1-315-36663-0

* For full contents and more information, visit: www.routledge.com/9780367749125

Computational Aspects of Psychometric Methods

With R



Patricia Martinková, Adéla Hladká

Series: Chapman & Hall/CRC Statistics in the Social and Behavioral Sciences

This book covers the computational aspects of psychometric methods involved in developing measurement instruments and analyzing measurement data in social sciences. It covers the main topics of psychometrics such as validity, reliability, item analysis, item response theory models, and computerized adaptive testing. The book is intended for a wide range of researchers in the field of educational, psychological, and health-related measurements, and also those developing measurement instruments and for those collecting and analyzing data from behavioral measurements, who are searching for a deeper understanding of underlying models and further development of analytical skills.

Chapman & Hall
July 2023:348

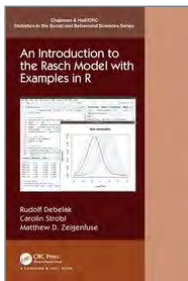
Hb: 978-0-367-51538-6: £145

Pb: 978-0-367-51539-3: £56.99

eBook: 978-1-003-05431-3

* For full contents and more information, visit: www.routledge.com/9780367515393

An Introduction to the Rasch Model with Examples in R



Rudolf Debelak, Carolin Strobl, Matthew D. Zeigenfuse

Series: Chapman & Hall/CRC Statistics in the Social and Behavioral Sciences

This book offers a clear, comprehensive introduction to the Rasch model along with practical examples in the free, open-source software R. It is accessible for readers without a background in psychometrics or statistics, while also providing detailed explanations of the relevant mathematical and statistical concepts for readers who want to gain a deeper understanding. Its worked examples in R demonstrate how to apply the methods to real-world examples and how to interpret the resulting output.

Chapman & Hall
June 2022:322

Hb: 978-1-032-26558-2: £150

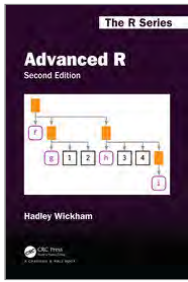
Pb: 978-1-138-71046-7: £54.99

eBook: 978-1-315-20062-0

* For full contents and more information, visit: www.routledge.com/9781138710467

2ND EDITION

Advanced R, Second Edition



Hadley Wickham

Series: Chapman & Hall/CRC The R Series

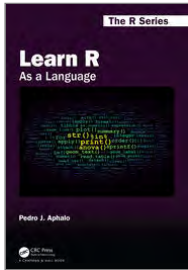
Advanced R presents useful tools and techniques for attacking many types of R programming problems, helping you avoid mistakes and dead ends. With more than ten years of experience programming in R, the author illustrates the elegance, beauty, and flexibility at the heart of R. The book develops the necessary skills to produce quality code that can be used in a variety of circumstances. You will learn: The fundamentals of R, including standard data types and functions Functional programming as a useful framework for solving wide classes of problems The positives and negatives of metaprogramming How to write fast, memory-efficient code

Chapman & Hall
May 2019:604
Hb: 978-0-367-25537-4: **£175**
Pb: 978-0-815-38457-1: **£49.99**
eBook: 978-1-351-20131-5

* For full contents and more information, visit: www.routledge.com/9780815384571

Learn R

As a Language



Pedro J. Aphalo

Series: Chapman & Hall/CRC The R Series

This book teaches how to use the R for data analysis. However, it goes beyond a cookbook approach, and instead focuses on how to use R to flexibly explore and analyse data to efficiently and reliably extract information. Using this book, the reader will become confident and reasonably independent in the use of R when faced with new challenges. They will learn their way around in the R "ecosystem" and pick it up like a child would learn a language – explore, employ it, learn from mistakes, and recognise patterns and the coding philosophy behind R. The book is for everyone who wants to use R for complex statistical analysis and who wants to gain more self-confidence in their use of R.

Chapman & Hall
July 2020:364
Hb: 978-0-367-18255-7: **£150**
Pb: 978-0-367-18253-3: **£56.99**
eBook: 978-0-429-06034-2

* For full contents and more information, visit: www.routledge.com/9780367182533

2ND EDITION

Statistical Computing with R, Second Edition



Maria L. Rizzo

Series: Chapman & Hall/CRC The R Series

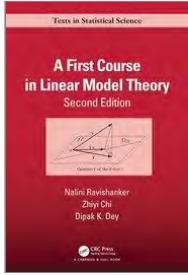
Computational statistics and statistical computing are two areas that employ computational, graphical, and numerical approaches to solve statistical problems, making the versatile R language an ideal computing environment for these fields. This second edition continues to encompass the traditional core material of computational statistics, with an emphasis on using the R language via an examples-based approach. It includes R code for all examples and R notes to help explain the R programming concepts. This edition also features a new chapter on nonparametric regression and smoothing.

Chapman & Hall
March 2019:490
Hb: 978-1-466-55332-3: **£68.99**
eBook: 978-0-429-19276-0

* For full contents and more information, visit: www.routledge.com/9781466553323

2ND EDITION

A First Course in Linear Model Theory



Nalini Ravishanker, Zhiyi Chi, Dipak K. Dey

Series: Chapman & Hall/CRC Texts in Statistical Science

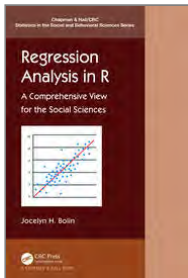
This book represents an entirely fresh approach for introducing to students the mathematical and statistical concepts and tools that form the backbone for the study of the theory and applications of linear models, both univariate and multivariate. This second edition features several new topics that are extremely relevant to the current research in statistical methodology. Revised or expanded topics include analysis of covariance, Bayesian linear and generalized linear model, nonlinear regression, ridge regression, resistant and robust regression, generalized linear models, model selection, multiple comparisons, hierarchical linear models, random effects and variance components.

Chapman & Hall
October 2021:530
Hb: 978-1-439-85805-9: **£84.99**
eBook: 978-1-315-15665-1

* For full contents and more information, visit: www.routledge.com/9781439858059

Regression Analysis in R

A Comprehensive View for the Social Sciences



Jocelyn E. Bolin

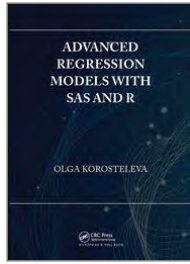
Series: Chapman & Hall/CRC Statistics in the Social and Behavioral Sciences

Regression Analysis in R: A Comprehensive View for the Social Sciences covers the basic applications of multiple linear regression all the way through to more complex regression applications and extensions. Written for graduate level students of social science disciplines this book walks readers through bivariate correlation giving them a solid framework from which to expand into more complicated regression models. Concepts are demonstrated using R software and real data examples.

Chapman & Hall
July 2022:192
Hb: 978-1-032-25775-4: **£150**
Pb: 978-0-367-27258-6: **£58.99**
eBook: 978-0-429-29584-3

* For full contents and more information, visit: www.routledge.com/9780367272586

Advanced Regression Models with SAS and R



Olga Korosteleva

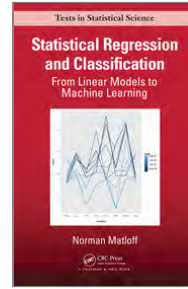
The material covered by this book consists of a collection of regression models beyond linear regression. The linear regression model is presented in the first chapter in order to refresh the reader's memory, emphasize certain points, and set the notation. The subsequent chapters talk about models for categorical data, count data, proportions, longitudinal data, hierarchical data, and others.

Chapman & Hall
December 2020:324
Hb: 978-1-138-04901-7: **£84.99**
Pb: 978-0-367-73242-4: **£44.99**
eBook: 978-1-315-16982-8

* For full contents and more information, visit: www.routledge.com/9780367732424

Statistical Regression and Classification

From Linear Models to Machine Learning



Norman Matloff

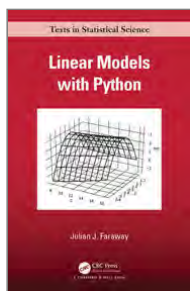
Series: *Chapman & Hall/CRC Texts in Statistical Science*

This text provides a modern introduction to regression and classification with an emphasis on big data and R. Each chapter is partitioned into a main body section and an "extras" section. The main body uses math stat very sparingly and always in the context of something concrete, which means that readers can skip the math stat content entirely if they wish. The "extras" section is for those who feel comfortable with analysis using math stat.

Chapman & Hall
August 2017:532
Hb: 978-1-138-06646-5: **£145**
Pb: 978-1-498-71091-6: **£66.99**
eBook: 978-1-315-11958-8

* For full contents and more information, visit: www.routledge.com/9781498710916

Linear Models with Python



Julian J. Faraway

Series: *Chapman & Hall/CRC Texts in Statistical Science*

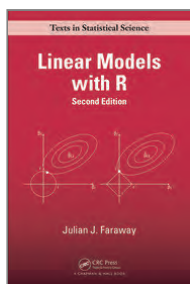
Like its widely praised, best-selling companion version, *Linear Models with R*, this book replaces R with Python to seamlessly give a coherent exposition of the practice of linear modeling. *Linear Models with Python* offers up-to-date insight on essential data analysis topics, from estimation, inference, and prediction to missing data, factorial models, and block designs. Numerous examples illustrate how to apply the different methods using Python. *Linear Models with Python* explains how to use linear models in physical science, engineering, social science, and business applications. It is ideal as a textbook for linear models or linear regression courses.

Chapman & Hall
December 2020:308
Hb: 978-1-138-48395-8: **£84.99**
eBook: 978-1-351-05341-9

* For full contents and more information, visit: www.routledge.com/9781138483958

2ND EDITION

Linear Models with R



Julian J. Faraway

Series: *Chapman & Hall/CRC Texts in Statistical Science*

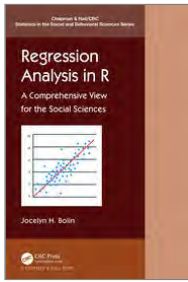
Like its widely praised, best-selling predecessor, this second edition explains how to use linear models in physical science, engineering, social science, and business applications. The material on interpreting linear models now distinguishes the main applications of prediction and explanation and introduces elementary notions of causality. This edition also covers QR decomposition, splines, additive models, Lasso, multiple imputation, and false discovery rates. It extensively uses R's ggplot2 graphics package in addition to base graphics.

Chapman & Hall
July 2014:286
Hb: 978-1-439-88733-2: **£86.99**
eBook: 978-0-429-11171-6

* For full contents and more information, visit: www.routledge.com/9781439887332

Regression Analysis in R

A Comprehensive View for the Social Sciences



Jocelyn E. Bolin

Series: Chapman & Hall/CRC Statistics in the Social and Behavioral Sciences

Regression Analysis in R: A Comprehensive View for the Social Sciences covers the basic applications of multiple linear regression all the way through to more complex regression applications and extensions. Written for graduate level students of social science disciplines this book walks readers through bivariate correlation giving them a solid framework from which to expand into more complicated regression models. Concepts are demonstrated using R software and real data examples.

Chapman & Hall

July 2022: 192

Hb: 978-1-032-25775-4: **£150**

Pb: 978-0-367-27258-6: **£58.99**

eBook: 978-0-429-29584-3

* For full contents and more information, visit: www.routledge.com/9780367272586

SAS Programming for Elementary Statistics

Getting Started



Carla L. Goad

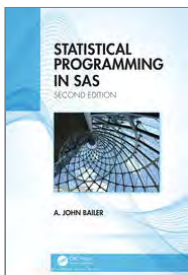
This textbook provides an introduction to SAS Programming for elementary statistical methods. It does not require any previous experience of SAS, but the reader is assumed to have a basic understanding of statistics. It covers the basics of programming, including creation of datasets in SAS, debugging a program, and the overall construction of a SAS program. It covers all DATA Step operations, t-tests, confidence intervals, simple linear regression, and ANOVA. The book is full of examples and computer-based exercises, and has been developed from the vast experience of the author teaching from the material over many years.

Chapman & Hall
December 2020:398
Hb: 978-1-138-58909-4: £150
Pb: 978-1-138-58902-5: £56.99
eBook: 978-0-429-49190-0

* For full contents and more information, visit: www.routledge.com/9781138589025

2ND EDITION

Statistical Programming in SAS



A. John Bailer

The book focuses on good programming and coding practice for producing data sets for later analyses, using simulation studies to explore statistical concepts and employing computationally intensive methods. Many of the topics included in the SAS Base Certification exam are included in this book along with topics such as SQL and Macros that are extensively considered in the SAS Advanced Certification Exam. Topics beyond either of these exams are also discussed such as high-quality graphical displays and text processing.

Chapman & Hall
December 2019:378
Hb: 978-0-367-35800-6: £170
Pb: 978-0-367-35797-9: £69.99
eBook: 978-0-429-34184-7

* For full contents and more information, visit: www.routledge.com/9780367357979

2ND EDITION

Modern Statistics for the Social and Behavioral Sciences

A Practical Introduction, Second Edition

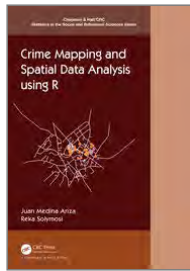
**Rand Wilcox**

Designed for a two-semester, introductory course for graduate students in the social sciences, this text illustrates how to use R to apply both standard and modern methods to correct known problems with classic techniques. Numerous illustrations provide a conceptual basis for understanding why practical problems with classic methods were missed for so many years, and why modern techniques have practical value. The second edition will add coverage of advances in regression, such as new insights regarding smoothers. New results on comparing medians would be included and quite a few improvements relevant to ANCOVA will be added. In addition, new R functions will be described.

Chapman & Hall
December 2020:754
Hb: 978-1-498-79678-1: **£110**
Pb: 978-0-367-73596-8: **£44.99**
eBook: 978-1-315-15448-0

* For full contents and more information, visit: www.routledge.com/9780367735968

Crime Mapping and Spatial Data Analysis using R



Juan Medina Ariza, Reka Solymosi

Series: Chapman & Hall/CRC Statistics in the Social and Behavioral Sciences

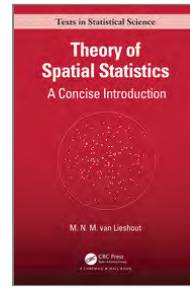
Practical introduction to crime mapping and spatial data analysis using R and R Studio. Crime mapping and analysis of crime problems using spatially explicit data has become a central feature of law enforcement agencies across the world. Criminology degrees have begun to adapt their curriculums to foster the skills required for these jobs.

Chapman & Hall
April 2023:450
Hb: 978-0-367-72469-6: **£76.99**
eBook: 978-1-003-15491-4

* For full contents and more information, visit: www.routledge.com/9780367724696

Theory of Spatial Statistics

A Concise Introduction



M.N.M. van Lieshout

Series: Chapman & Hall/CRC Texts in Statistical Science

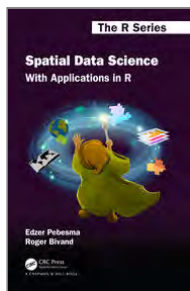
Spatial data are collected in various ways, for example, weather maps, soil samples, incident patterns, microscopical slices, satellite, radar, or X-ray images. The statistical analysis of spatial data is treated as a separate topic, as it is different from classical statistical data in a number of ways. This book presents a concise introduction to the theory underlying the analysis of the main types of spatial data. It includes examples to illustrate the topics, including R code for their implementation, as well as exercises to support course teaching and self-study.

Chapman & Hall
March 2019:182
Hb: 978-0-367-14642-9: **£150**
Pb: 978-0-367-14639-9: **£56.99**
eBook: 978-0-429-05286-6

* For full contents and more information, visit: www.routledge.com/9780367146399

Spatial Data Science

With Applications in R



Edzer Pebesma, Roger Bivand

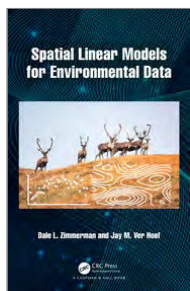
Series: Chapman & Hall/CRC The R Series

This is a book for data scientists with intermediate R knowledge. The book gives a detailed explanation of the core spatial software packages for R: sf for simple feature access, and stars for raster and vector data cubes – array data with spatial and temporal dimensions. It also shows how geometrical operations change when going from a flat space to the surface of a sphere. This is what sf and stars use when coordinates are not projected. Separate chapters detail a variety of plotting approaches for spatial maps using R, and different ways of handling very large vector or raster (imagery) datasets, locally, in databases, or in the cloud.

Chapman & Hall
May 2023:314
Hb: 978-1-138-31118-3: **£76.99**
eBook: 978-0-429-45901-6

* For full contents and more information, visit: www.routledge.com/9781138311183

Spatial Linear Models for Environmental Data



Dale L. Zimmerman, Jay M. Ver Hoef

Series: Chapman & Hall/CRC Applied Environmental Statistics

Many applied researchers equate spatial statistics with prediction or mapping, but this book naturally extends linear models, which includes regression and ANOVA as pillars of applied statistics, to achieve a more comprehensive treatment of the analysis of spatially autocorrelated data. *Spatial Linear Models for Environmental Data*, aimed at students and professionals with a master's level training in statistics, presents a unique, applied, and thorough treatment of spatial linear models within a statistics framework. By mimicking their examples and R code, readers will be able to fit spatial linear models to their data and draw proper scientific conclusions.

Chapman & Hall
April 2024:416
Hb: 978-0-367-18334-9: **£74.99**
eBook: 978-0-429-06087-8

* For full contents and more information, visit: www.routledge.com/9780367183349

Computer Intensive Methods in Statistics



Silvelyn Zwanzig, Behrang Mahjani

This textbook gives an overview of statistical methods that have been developed during the last years due to increasing computer use, including random number generators, Monte Carlo methods, Markov Chain Monte Carlo (MCMC) methods, Bootstrap, EM algorithms, SIMEX, variable selection, density estimators, kernel estimators, orthogonal and local polynomial estimators, wavelet estimators, splines, and model assessment. Computer Intensive Methods in Statistics is written for students at graduate level, but can also be used by practitioners.

Chapman & Hall
December 2019:226
Hb: 978-0-367-19425-3: **£145**
Pb: 978-0-367-19423-9: **£52.99**
eBook: 978-0-429-20232-2

* For full contents and more information, visit: www.routledge.com/9780367194239

2ND EDITION

Statistical Computing with R, Second Edition



Maria L. Rizzo

Series: Chapman & Hall/CRC The R Series

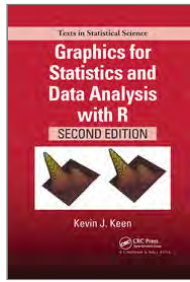
Computational statistics and statistical computing are two areas that employ computational, graphical, and numerical approaches to solve statistical problems, making the versatile R language an ideal computing environment for these fields. This second edition continues to encompass the traditional core material of computational statistics, with an emphasis on using the R language via an examples-based approach. It includes R code for all examples and R notes to help explain the R programming concepts. This edition also features a new chapter on nonparametric regression and smoothing.

Chapman & Hall
March 2019:490
Hb: 978-1-466-55332-3: **£68.99**
eBook: 978-0-429-19276-0

* For full contents and more information, visit: www.routledge.com/9781466553323

2ND EDITION

Graphics for Statistics and Data Analysis with R

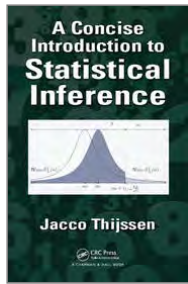
**Kevin J. Keen**

The book presents the basic principles of sound graphical design and applies these principles to engaging examples using the graphical functions available in R. It offers a wide variety of graphical displays for the presentation of data, including modern tools for data visualization and representation. The second edition will add examples with the R package ggplot2 in addition to examples with the base and lattice packages in the first edition.

Chapman & Hall
December 2020: 612
Hb: 978-1-498-77983-8: **£77.99**
Pb: 978-0-367-73444-2: **£44.99**
eBook: 978-0-429-03106-9

* For full contents and more information, visit: www.routledge.com/9780367734442

A Concise Introduction to Statistical Inference



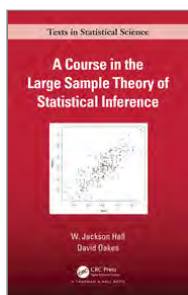
Jacco Thijssen

This short book introduces the main ideas of statistical inference in a way that is both user friendly and mathematically sound. Particular emphasis is placed on the common foundation of many models used in practice. In addition, the book focuses on the formulation of appropriate statistical models to study problems in business, economics, and the social sciences, as well as on how to interpret the results from statistical analyses. The book will be useful to students who are interested in rigorous applications of statistics to problems in business, economics and the social sciences, as well as students who have studied statistics in the past, but need a more solid grounding in statistical techniques to further their careers.

Chapman & Hall
December 2016:230
Hb: 978-1-138-46967-9: £180
Pb: 978-1-498-75577-1: £56.99
eBook: 978-1-315-38023-0

* For full contents and more information, visit: www.routledge.com/9781498755771

A Course in the Large Sample Theory of Statistical Inference



W. Jackson Hall, David Oakes

Series: Chapman & Hall/CRC Texts in Statistical Science

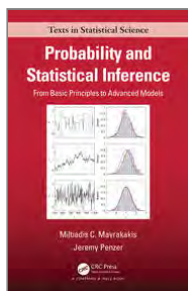
This book provides an accessible but rigorous introduction to asymptotic theory in parametric statistical models. Asymptotic results for estimation and testing are derived using the "moving alternative" formulation due to R. A. Fisher and L. Le Cam. Later chapters include discussions of linear rank statistics and of chi-squared tests for contingency table analysis, including situations where parameters are estimated from the complete ungrouped data. The book is based on lecture notes prepared by the first author, subsequently edited, expanded and updated by the second author. Familiarity with undergraduate probability and statistics is necessary.

Chapman & Hall
December 2023:320
Hb: 978-1-498-72606-1: £84.99
eBook: 978-0-429-16008-0

* For full contents and more information, visit: www.routledge.com/9781498726061

Probability and Statistical Inference

From Basic Principles to Advanced Models



Miltiadis C. Mavrakakis, Jeremy Penzer

Series: Chapman & Hall/CRC Texts in Statistical Science

This book covers aspects of probability, distribution theory, and inference that are fundamental to a proper understanding of data analysis and statistical modelling. It presents these topics in an accessible manner without sacrificing mathematical rigour, bridging the gap between the many excellent introductory books and the more advanced, graduate-level texts. The book introduces and explores techniques that are relevant to modern practitioners, while being respectful to the history of statistical inference. It seeks to provide a thorough grounding in both the theory and application of statistics, with even the more abstract parts placed in the context of a practical setting.

Chapman & Hall
September 2022:444
Hb: 978-1-584-88939-7: £120
Pb: 978-0-367-74912-5: £45.99
eBook: 978-1-315-36663-0

* For full contents and more information, visit: www.routledge.com/9780367749125

Statistical Inference via Data Science: A ModernDive into R and the Tidyverse



Chester Ismay, Albert Y. Kim

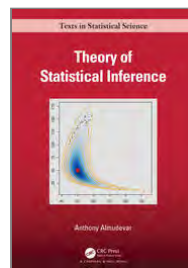
Series: Chapman & Hall/CRC The R Series

This is a modern textbook in statistical inference, using the principles of data science through R and the Tidyverse. It assumes minimal background knowledge of the reader: there is no algebra, no calculus, and no prior programming/coding experience. It is designed to be a gentle introduction to the practice of analyzing data and answering questions using data the way data scientists, statisticians, data journalists, and other researchers would. This book is suitable for teaching a first course in statistical inference at undergraduate level.

Chapman & Hall
December 2019:460
Hb: 978-0-367-40987-6: £175
Pb: 978-0-367-40982-1: £68.99
eBook: 978-0-367-40991-3

* For full contents and more information, visit: www.routledge.com/9780367409821

Theory of Statistical Inference



Anthony Almudevar

Series: Chapman & Hall/CRC Texts in Statistical Science

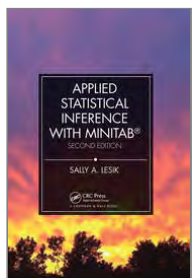
Theory of Statistical Inference is concerned with the development of a type of optimization theory which can be used to inform the choice of statistical methodology. Of course, this would be pointless without reference to such methods. We are simply noting that they are included in support of the larger goal. This book distinguishes itself from other graduate textbooks because it is written from the point of view that some degree of understanding of measure theory, as well as other branches of mathematics, which include topology, group theory and complex analysis, should be a part of the canon of statistical inference.

Chapman & Hall
December 2021:470
Hb: 978-0-367-48875-8: £105
eBook: 978-1-003-04934-0

* For full contents and more information, visit: www.routledge.com/9780367488758

2ND EDITION

Applied Statistical Inference with MINITAB®, Second Edition



Sally A. Lesik

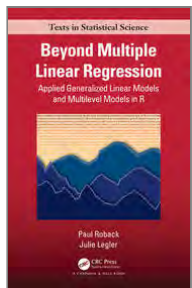
This book covers material that is typically presented in an intermediate course in statistics at the undergraduate level and a first course in applied statistics at the graduate level. Topics include basic statistical inference, regression, and ANOVA. More advanced topics include non-parametric statistics, logistic regression, and goodness-of-fit tests. One key feature of this book is that it is written to provide readers with the foundation necessary to study more advanced topics in statistics.

Chapman & Hall
March 2021:496
Hb: 978-1-498-77998-2: £120
Pb: 978-0-367-78057-9: £45.99
eBook: 978-0-429-44495-1

* For full contents and more information, visit: www.routledge.com/9780367780579

Beyond Multiple Linear Regression

Applied Generalized Linear Models And Multilevel Models in R



Paul Roback, Julie Legler

Series: Chapman & Hall/CRC Texts in Statistical Science

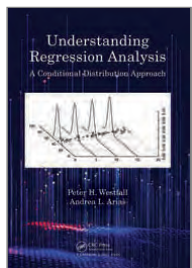
Designed for advanced undergraduate or non-major graduate students in Advanced Statistical Modeling or Regression II as well as courses on Generalized Linear Models, Longitudinal Data Analysis, Correlated Data, or Multilevel Models, this text offers a unified discussion of generalized linear models and correlated data methods. It explores case studies involving real data and details material on R at the end of each chapter. A solutions manual is available for qualified instructors.

Chapman & Hall
December 2020:436
Hb: 978-1-439-88538-3: £84.99
eBook: 978-0-429-06666-5

* For full contents and more information, visit: www.routledge.com/9781439885383

Understanding Regression Analysis

A Conditional Distribution Approach



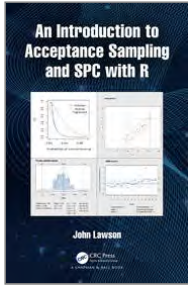
Peter H. Westfall, Andrea L. Arias

This book unifies diverse regression applications including the classical model, ANOVA models, generalized models including Poisson, Negative binomial, logistic, and survival, neural networks and decision trees under a common umbrella; namely, the conditional distribution model. It explains why the conditional distribution model is the correct model, also explains why the assumptions of the classical regression model are wrong. This one takes a realistic approach from the outset that all models are just approximations. The emphasis is to model Nature's processes realistically, rather than to assume that Nature works in particular, constrained ways.

Chapman & Hall
May 2022:514
Hb: 978-0-367-45852-2: £120
Pb: 978-0-367-49351-6: £39.99
eBook: 978-1-003-02576-4

* For full contents and more information, visit: www.routledge.com/9780367493516

An Introduction to Acceptance Sampling and SPC with R



John Lawson

In the modern, world sampling plans and the statistical calculations used in statistical quality control are done with the help of computers. To get more hands on experience in creating acceptance sampling plans and control charts necessarily involves the use of software. In industry, commercial software is often used. In this book we will focus on several R packages that can duplicate and in some cases exceed the functionality of these commercial programs. In addition to demonstrating how to use R for acceptance sampling and control charts, this book will focus on how the use of these specific tools can lead to quality improvements both within a company and within their supplier companies.

Chapman & Hall

February 2021:298

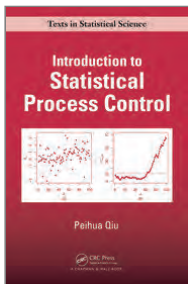
Hb: 978-0-367-56995-2: **£130**

Pb: 978-0-367-55576-4: **£48.99**

eBook: 978-1-003-10027-0

* For full contents and more information, visit: www.routledge.com/9780367555764

Introduction to Statistical Process Control



Peihua Qiu

Series: Chapman & Hall/CRC Texts in Statistical Science

A major tool for quality control and management, statistical process control (SPC) monitors sequential processes, such as production lines and Internet traffic, to ensure that they work stably and satisfactorily. Along with covering traditional methods, this book describes many recent SPC methods that improve upon the more established techniques. The author—a leading researcher on SPC—shows how these methods can handle new applications. Pseudo codes are presented for important methods and all R functions and datasets are available on the author's website.

Chapman & Hall

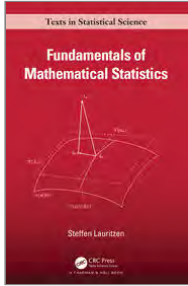
October 2013:520

Hb: 978-1-439-84799-2: **£105**

eBook: 978-0-429-09077-6

* For full contents and more information, visit: www.routledge.com/9781439847992

Fundamentals of Mathematical Statistics



Steffen Lauritzen

Series: *Chapman & Hall/CRC Texts in Statistical Science*

This book is meant for a standard one-semester advanced undergraduate or graduate level course on Mathematical Statistics. It covers all the key topics - statistical models, linear normal models, exponential families, estimation, asymptotics of maximum likelihood, significance testing, and models for tables of counts. It assumes a good background in mathematical analysis, linear algebra, and probability, but includes an appendix with basic results from these areas. Throughout the text, there are numerous examples and graduated exercises that illustrate the topics covered, rendering the book suitable for teaching or self-study.

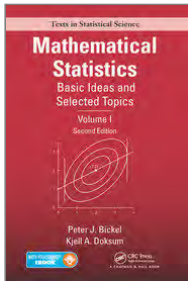
Chapman & Hall
April 2023:258
Hb: 978-1-032-22382-7: **£76.99**
eBook: 978-1-003-27235-9

* For full contents and more information, visit: www.routledge.com/9781032223827

2ND EDITION

Mathematical Statistics

Basic Ideas and Selected Topics, Volume I, Second Edition



Peter J. Bickel, Kjell A. Doksum

Series: *Chapman & Hall/CRC Texts in Statistical Science*

This first volume presents fundamental, classical statistical concepts at the doctorate level without using measure theory. It covers estimation, prediction, testing, confidence sets, Bayesian analysis, and the general approach of decision theory. This edition gives careful proofs of major results and explains how the theory sheds light on the properties of practical methods. The book includes in-depth examples throughout as well as many exercises at the end of each chapter.

Chapman & Hall
April 2015:576
Hb: 978-1-498-72380-0: **£96.99**
eBook: 978-0-429-17478-0

* For full contents and more information, visit: www.routledge.com/9781498723800

Mathematical Statistics

Basic Ideas and Selected Topics, Volume II



Peter J. Bickel, Kjell A. Doksum

Series: *Chapman & Hall/CRC Texts in Statistical Science*

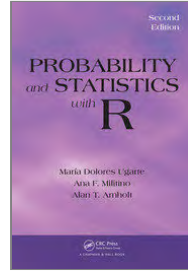
This second volume focuses on inference in non- and semiparametric models, including topics in machine learning. It not only reexamines the procedures introduced in the authors' first volume from a more sophisticated point of view but also addresses new problems originating from the analysis of estimation of functions and other complex decision procedures and large-scale data analysis. Numerous examples and problems illustrate statistical modeling and inference concepts. Measure theory is not required for understanding.

Chapman & Hall
November 2015:488
Hb: 978-1-498-72268-1: **£86.99**
eBook: 978-0-429-15382-2

* For full contents and more information, visit: www.routledge.com/9781498722681

2ND EDITION

Probability and Statistics with R



Maria Dolores Ugarte, Ana F. Militino, Alan T. Arnholt

Since the publication of the popular first edition, the contributed R packages on CRAN have increased from around 1,000 to over 6,000. This second edition explores how some of these new packages make analysis easier and more intuitive as well as create more visually pleasing graphs. Along with adding new examples and exercises, this edition improves the existing examples, problems, concepts, data, and functions. Data sets, R functions, and more are available online.

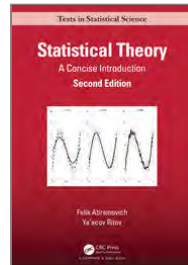
Chapman & Hall
July 2015:984
Hb: 978-1-466-50439-4: **£96.99**
eBook: 978-0-429-09614-3

* For full contents and more information, visit: www.routledge.com/9781466504394

2ND EDITION

Statistical Theory

A Concise Introduction



Felix Abramovich, Ya'acov Ritov

Series: *Chapman & Hall/CRC Texts in Statistical Science*

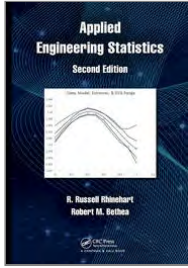
Designed for a one-semester advanced undergraduate or graduate statistical theory course, this book clearly explains the underlying ideas, mathematics, and principles of major statistical concepts, including parameter estimation, confidence intervals, hypothesis testing, asymptotic analysis, Bayesian inference, linear models, nonparametric statistics, and elements of decision theory. It introduces these topics on a clear intuitive level using illustrative examples in addition to the formal definitions, theorems, and proofs. Based on the authors' lecture notes, the book is self-contained, which maintains a proper balance between the clarity and rigor of exposition.

Chapman & Hall
December 2022:236
Hb: 978-1-032-00745-8: **£76.99**
eBook: 978-1-003-17540-7

* For full contents and more information, visit: www.routledge.com/9781032007458

2ND EDITION

Applied Engineering Statistics



R. Russell Rhinehart, Robert M. Bethea

Thoroughly updated throughout, this second edition will continue to be about the practicable methods of statistical applications for engineers, and as well for scientists and people in business. Contrasting a mathematical and abstract orientation of many statistics texts, which expresses the science/math values of researchers, this book presents the fundamental concepts, provides supporting derivation, and focuses on the application to concrete examples and the interpretation of outcomes.

CRC Press

November 2021:500

Hb: 978-1-032-11948-9: £82.99

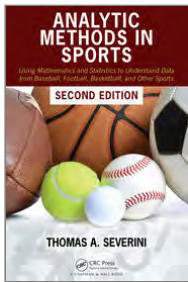
eBook: 978-1-003-22233-0

* For full contents and more information, visit: www.routledge.com/9781032119489

2ND EDITION

Analytic Methods in Sports

Using Mathematics and Statistics to Understand Data from Baseball, Football, Basketball, and Other Sports



Thomas A Severini

Analytic Methods in Sports: Using Mathematics and Statistics to Understand Data from Baseball, Football, Basketball, and Other Sports, 2nd Edition provides a concise yet thorough introduction to the analytic and statistical methods that are useful in studying sports. It explains how to apply the methods to sports data and interpret the results, demonstrating that the analysis of sports data is often different from standard statistical analyses. The book integrates a large number of motivating sports examples throughout and offers guidance on computation and suggestions for further reading in each chapter.

Chapman & Hall

March 2020:372

Hb: 978-0-367-25207-6: **£155**

Pb: 978-0-367-46938-2: **£58.99**

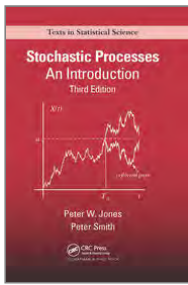
eBook: 978-0-367-25209-0

* For full contents and more information, visit: www.routledge.com/9780367469382

3RD EDITION

Stochastic Processes

An Introduction, Third Edition



Peter Watts Jones, Peter Smith

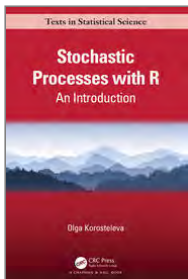
Based on a well-established and popular course taught by the authors over many years, *Stochastic Processes: An Introduction, Third Edition*, discusses the modelling and analysis of random experiments, where processes evolve over time. The text begins with a review of relevant fundamental probability. It then covers gambling problems, random walks, and Markov chains. The authors go on to discuss random processes continuous in time, including Poisson, birth and death processes, and general population models, and present an extended discussion on the analysis of associated stationary processes in queues.

Chapman & Hall
September 2020:272
Hb: 978-1-498-77811-4: **£64.99**
Pb: 978-0-367-65760-4: **£47.99**
eBook: 978-1-315-15657-6

* For full contents and more information, visit: www.routledge.com/9780367657604

Stochastic Processes with R

An Introduction



Olga Korosteleva

Series: Chapman & Hall/CRC Texts in Statistical Science

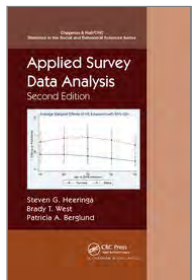
Stochastic Processes with R: An Introduction cuts through the heavy theory that is present in most courses on random processes and serves as practical guide to simulated trajectories and real-life applications for stochastic processes. The light yet detailed text provides a solid foundation that is an ideal companion for undergraduate statistics students looking to familiarise themselves with stochastic processes before going onto more advanced courses.

Chapman & Hall
February 2022:200
Hb: 978-1-032-15373-5: **£84.99**
eBook: 978-1-003-24428-8

* For full contents and more information, visit: www.routledge.com/9781032153735

2ND EDITION

Applied Survey Data Analysis



Steven G. Heeringa, Brady T. West, Patricia A. Berglund

Highly recommended by the Journal of Official Statistics, The American Statistician, and other journals, Applied Survey Data Analysis, Second Edition provides an up-to-date overview of state-of-the-art approaches to the analysis of complex sample survey data. Building on the wealth of material on practical approaches to descriptive analysis and regression modeling from the first edition, this second edition expands the topics covered and presents more step-by-step examples of modern approaches to the analysis of survey data using the newest statistical software.

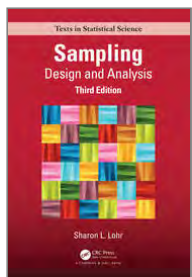
Chapman & Hall
December 2020:592
Hb: 978-1-498-76160-4: **£84.99**
Pb: 978-0-367-73611-8: **£45.99**
eBook: 978-1-315-15327-8

* For full contents and more information, visit: www.routledge.com/9780367736118

3RD EDITION

Sampling

Design and Analysis



Sharon L. Lohr

Series: Chapman & Hall/CRC Texts in Statistical Science

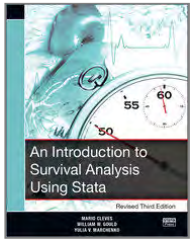
The third edition of this authoritative text has been thoroughly updated to incorporate recent advances in survey sampling, with a new chapter on nonprobability sampling and more than 200 new examples and exercises. Two new supplementary books, available for purchase or free download, show how to use R and SAS® software to select and analyze the samples discussed in the text.

Chapman & Hall
November 2021:674
Hb: 978-0-367-27950-9: **£68.99**
eBook: 978-0-429-29889-9

* For full contents and more information, visit: www.routledge.com/9780367279509

4TH EDITION

An Introduction to Survival Analysis Using Stata, Revised Third Edition



Mario Cleves, William Gould, Yulia Marchenko

An Introduction to Survival Analysis Using Stata, Revised Third Edition is the ideal tutorial for professional data analysts who want to learn survival analysis for the first time or who are well versed in survival analysis but are not as dexterous in using Stata to analyze survival data. This text also serves as a valuable reference to those readers who already have experience using Stata's survival analysis routines. This revised third edition has been updated for Stata 14, and it includes a new section on predictive margins and marginal effects.

Stata Press

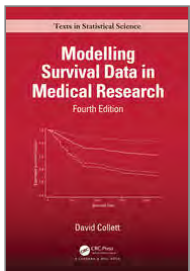
May 2016:428

Pb: 978-1-597-18174-7: £73.99

* For full contents and more information, visit: www.routledge.com/9781597181747

4TH EDITION

Modelling Survival Data in Medical Research



David Collett

Series: Chapman & Hall/CRC Texts in Statistical Science

Fourth edition has new chapters on Bayesian survival analysis and use of the R software. Chapters extensively revised, expanded to add new material on topics that include methods for assessing predictive ability of a model, joint models for longitudinal and survival data, modern methods for the analysis of interval-censored survival data.

Chapman & Hall

May 2023:556

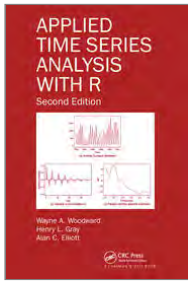
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2ND EDITION

Applied Time Series Analysis with R



Wayne A. Woodward, Henry L. Gray, Alan C. Elliott

Virtually any random process that develops chronologically can be viewed as a time series. This textbook presents real-world examples from the fields of engineering, economics, medicine, biology, and chemistry to promote a solid understanding of the data and associated methods. The text explores many important new methodologies that have developed in time series, such as time series with long memory, time varying frequencies (TVF), ARCH and GARCH models, multivariate time series models, wavelets, and more. The authors also provide an R-based software package available on CRAN.

CRC Press

June 2021:636

Hb: 978-1-498-73422-6: £105

Pb: 978-1-032-09722-0: £44.99

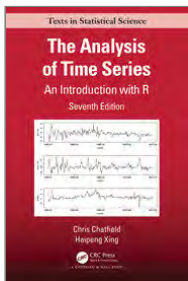
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7TH EDITION

The Analysis of Time Series

An Introduction with R



Chris Chatfield, Haipeng Xing

Series: Chapman & Hall/CRC Texts in Statistical Science

This new edition of this classic title, now in its seventh edition, presents a balanced and comprehensive introduction to the theory, implementation, and practice of time series analysis. The book covers a wide range of topics, including ARIMA models, forecasting methods, spectral analysis, linear systems, state-space models, the Kalman filters, nonlinear models, volatility models, and multivariate models.

Chapman & Hall

May 2019:414

Hb: 978-1-138-06613-7: £165

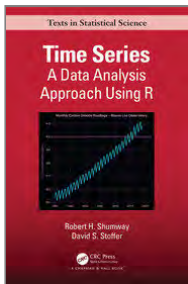
Pb: 978-1-498-79563-0: £71.99

eBook: 978-1-351-25944-6

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Time Series

A Data Analysis Approach Using R



Robert Shumway, David Stoffer

Series: Chapman & Hall/CRC Texts in Statistical Science

This textbook is designed for an introductory time series course where the prerequisites are an understanding of linear regression and some basic probability skills. All of the numerical examples were done using the R statistical package, and the code is typically listed at the end of an example.

Chapman & Hall

May 2019:272

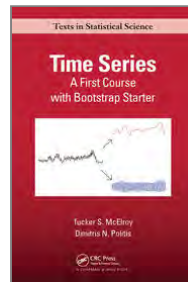
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eBook: 978-0-429-27328-5

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Time Series

A First Course with Bootstrap Starter



Tucker S. McElroy, Dimitris N. Politis

The book provides the foundation of time series methods, including linear filters and a geometric approach to prediction. The important paradigm of ARMA models is studied in-depth, as well as frequency domain methods. Entropy and other information theoretic notions are introduced, with applications to time series modeling. The second half of the book focuses on statistical inference, the fitting of time series models, as well as computational facets of forecasting. Many time series of interest are nonlinear in which case classical inference methods can fail, but bootstrap methods may come to the rescue.

Chapman & Hall

June 2021:586

Hb: 978-1-439-87651-0: £86.99

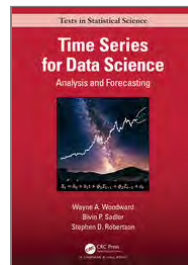
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Time Series for Data Science

Analysis and Forecasting



Wayne A. Woodward, Bivin Philip Sadler, Stephen Robertson

Series: Chapman & Hall/CRC Texts in Statistical Science

Data Science students and practitioners want to find a forecast that "works" and don't want to be constrained to a single forecasting strategy. Practical Time Series Analysis for Data Science discusses techniques of ensemble modelling for combining information from several strategies. Covering time series regression models, exponential smoothing, Holt-Winters forecasting, and Neural Networks. It places a particular emphasis on classical ARMA and ARIMA models that is often lacking from other textbooks on the subject.

Chapman & Hall

August 2022:528

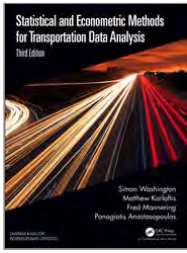
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3RD EDITION

Statistical and Econometric Methods for Transportation Data Analysis



Simon Washington, Matthew G. Karlaftis, Fred Mannering, Panagiotis Anastasopoulos

Series: Chapman & Hall/CRC Interdisciplinary Statistics

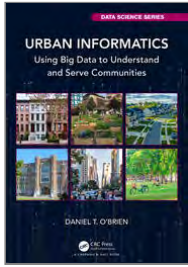
The complexity, diversity, and random nature of transportation problems necessitates a broad analytical toolbox. Describing tools commonly used in the field, *Statistical and Econometric Methods for Transportation Data Analysis, Third Edition* provides an understanding of a broad range of analytical tools required to solve transportation problems. It includes a wide breadth of examples and case studies covering applications in various aspects of transportation planning, engineering, safety, and economics.

Chapman & Hall
February 2020:496
Hb: 978-0-367-19902-9: £105
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Urban Informatics

Using Big Data to Understand and Serve Communities



Daniel T. O'Brien

Series: Chapman & Hall/CRC Data Science Series

Urban Informatics introduces the reader to the tools of data management, analysis, and manipulation using R statistical software. Designed for undergraduate and above level courses, this book is an ideal onramp for the study of urban informatics and how to translate novel data sets into new insights and practical tools. The book follows a unique pedagogical approach developed by the author to enable students to build skills by pursuing projects that inspire and motivate them. Each chapter has an Exploratory Data Assignment that prompts readers to practice their new skills on a data set of their choice.

Chapman & Hall

December 2022:340

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