

Regression Modeling Strategies 2nd Printing Edition

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Monte Carlo Strategies in Scientific Computing - Jun S. Liu 2008-01-04

This book provides an up-to-date treatment of the Monte Carlo method and develops a common framework under which various Monte Carlo techniques can be "standardized" and compared.

It can be used as a textbook for a graduate-level course on Monte Carlo methods.

Regression - Ludwig Fahrmeir 2013-05-09

The aim of this book is an applied and unified introduction into parametric, non- and semiparametric regression that closes the gap

between theory and application. The most important models and methods in regression are presented on a solid formal basis, and their appropriate application is shown through many real data examples and case studies. Availability of (user-friendly) software has been a major criterion for the methods selected and presented. Thus, the book primarily targets an audience that includes students, teachers and practitioners in social, economic, and life sciences, as well as students and teachers in statistics programs, and mathematicians and computer scientists with interests in statistical modeling and data analysis. It is written on an intermediate mathematical level and assumes only knowledge of basic probability, calculus, and statistics. The most important definitions and statements are concisely summarized in boxes. Two appendices describe required matrix algebra, as well as elements of probability calculus and statistical inference.

Applied Regression Analysis and Generalized

Linear Models - John Fox 2015-03-18

Combining a modern, data-analytic perspective with a focus on applications in the social sciences, the Third Edition of *Applied Regression Analysis and Generalized Linear Models* provides in-depth coverage of regression analysis, generalized linear models, and closely related methods, such as bootstrapping and missing data. Updated throughout, this Third Edition includes new chapters on mixed-effects models for hierarchical and longitudinal data. Although the text is largely accessible to readers with a modest background in statistics and mathematics, author John Fox also presents more advanced material in optional sections and chapters throughout the book. Available with Perusall—an eBook that makes it easier to prepare for class Perusall is an award-winning eBook platform featuring social annotation tools that allow students and instructors to collaboratively mark up and discuss their SAGE textbook. Backed by research and supported by

technological innovations developed at Harvard University, this process of learning through collaborative annotation keeps your students engaged and makes teaching easier and more effective. Learn more.

Deep Data Analytics for New Product Development - Walter R. Paczkowski 2020-02-19

This book presents and develops the deep data analytics for providing the information needed for successful new product development. Deep Data Analytics for New Product Development has a simple theme: information about what customers need and want must be extracted from data to effectively guide new product decisions regarding concept development, design, pricing, and marketing. The benefits of reading this book are twofold. The first is an understanding of the stages of a new product development process from ideation through launching and tracking, each supported by information about customers. The second benefit is an understanding of the deep data analytics

for extracting that information from data. These analytics, drawn from the statistics, econometrics, market research, and machine learning spaces, are developed in detail and illustrated at each stage of the process with simulated data. The stages of new product development and the supporting deep data analytics at each stage are not presented in isolation of each other, but are presented as a synergistic whole. This book is recommended reading for analysts involved in new product development. Readers with an analytical bent or who want to develop analytical expertise would also greatly benefit from reading this book, as well as students in business programs.

Applied Regression Modeling - Iain Pardoe 2013-01-07

Praise for the First Edition "The attention to detail is impressive. The book is very well written and the author is extremely careful with his descriptions . . . the examples are wonderful." —The American Statistician Fully

revised to reflect the latest methodologies and emerging applications, Applied Regression Modeling, Second Edition continues to highlight the benefits of statistical methods, specifically regression analysis and modeling, for understanding, analyzing, and interpreting multivariate data in business, science, and social science applications. The author utilizes a bounty of real-life examples, case studies, illustrations, and graphics to introduce readers to the world of regression analysis using various software packages, including R, SPSS, Minitab, SAS, JMP, and S-PLUS. In a clear and careful writing style, the book introduces modeling extensions that illustrate more advanced regression techniques, including logistic regression, Poisson regression, discrete choice models, multilevel models, and Bayesian modeling. In addition, the Second Edition features clarification and expansion of challenging topics, such as: Transformations, indicator variables, and interaction Testing

model assumptions Nonconstant variance Autocorrelation Variable selection methods Model building and graphical interpretation Throughout the book, datasets and examples have been updated and additional problems are included at the end of each chapter, allowing readers to test their comprehension of the presented material. In addition, a related website features the book's datasets, presentation slides, detailed statistical software instructions, and learning resources including additional problems and instructional videos. With an intuitive approach that is not heavy on mathematical detail, Applied Regression Modeling, Second Edition is an excellent book for courses on statistical regression analysis at the upper-undergraduate and graduate level. The book also serves as a valuable resource for professionals and researchers who utilize statistical methods for decision-making in their everyday work.

Permutation Methods - Paul W. Mielke

2007-07-29

This is the second edition of the comprehensive treatment of statistical inference using permutation techniques. It makes available to practitioners a variety of useful and powerful data analytic tools that rely on very few distributional assumptions. Although many of these procedures have appeared in journal articles, they are not readily available to practitioners. This new and updated edition places increased emphasis on the use of alternative permutation statistical tests based on metric Euclidean distance functions that have excellent robustness characteristics. These alternative permutation techniques provide many powerful multivariate tests including multivariate multiple regression analyses.

Non-negative Matrices and Markov Chains

Seneta 2006-07-02

Since its inception by Perron and Frobenius, the theory of non-negative matrices has developed enormously and is now being used and extended

in applied fields of study as diverse as probability theory, numerical analysis, demography, mathematical economics, and dynamic programming, while its development is still proceeding rapidly as a branch of pure mathematics in its own right. While there are books which cover this or that aspect of the theory, it is nevertheless not uncommon for workers in one or another branch of its development to be unaware of what is known in other branches, even though there is often formal overlap. One of the purposes of this book is to relate several aspects of the theory, insofar as this is possible. The author hopes that the book will be useful to mathematicians; but in particular to the workers in applied fields, so the mathematics has been kept as simple as could be managed. The mathematical requisites for reading it are: some knowledge of real-variable theory, and matrix theory; and a little knowledge of complex-variable; the emphasis is on real-variable methods. (There is only one part of the

book, the second part of 55.5, which is of rather specialist interest, and requires deeper knowledge.) Appendices provide brief expositions of those areas of mathematics needed which may be less generally known to the average reader.

Smoothing Spline ANOVA Models - Chong Gu
2002-01-08

Smoothing methods are an active area of research. In this book, the author presents a comprehensive treatment of penalty smoothing under a unified framework. Methods are developed for (i) regression with Gaussian and non-Gaussian responses as well as with censored life time data; (ii) density and conditional density estimation under a variety of sampling schemes; and (iii) hazard rate estimation with censored life time data and covariates. Extensive discussions are devoted to model construction, smoothing parameter selection, computation, and asymptotic convergence. Most of the computational and data analytical tools

discussed in the book are implemented in R, an open-source clone of the popular S/S- PLUS language.

[Reliability, Life Testing and the Prediction of Service Lives](#) - Sam C. Saunders 2010-04-26

This book is intended for students and practitioners who have had a calculus-based statistics course and who have an interest in safety considerations such as reliability, strength, and duration-of-load or service life. Many persons studying statistical science will be employed professionally where the problems encountered are obscure, what should be analyzed is not clear, the appropriate assumptions are equivocal, and data are scant. In this book there is no disclosure with many of the data sets what type of investigation should be made or what assumptions are to be used.

Statistics for Lawyers - Michael O. Finkelstein
2015-12-16

This classic text, first published in 1990, is designed to introduce law students, law

teachers, practitioners, and judges to the basic ideas of mathematical probability and statistics as they have been applied in the law. The third edition includes over twenty new sections, including the addition of timely topics, like New York City police stops, exonerations in death-sentence cases, projecting airline costs, and new material on various statistical techniques such as the randomized response survey technique, rare-events meta-analysis, competing risks, and negative binomial regression. The book consists of sections of exposition followed by real-world cases and case studies in which statistical data have played a role. The reader is asked to apply the theory to the facts, to calculate results (a hand calculator is sufficient), and to explore legal issues raised by quantitative findings. The authors' calculations and comments are given in the back of the book. As with previous editions, the cases and case studies reflect a broad variety of legal subjects, including antidiscrimination, mass torts, taxation, school

finance, identification evidence, preventive detention, handwriting disputes, voting, environmental protection, antitrust, sampling for insurance audits, and the death penalty. A chapter on epidemiology was added in the second edition. In 1991, the first edition was selected by the University of Michigan Law Review as one of the important law books of the year.

Life Distributions Albert W. Marshall
2007-10-13

This book is devoted to the study of univariate distributions appropriate for the analyses of data known to be nonnegative. The book includes much material from reliability theory in engineering and survival analysis in medicine.

Selected Papers of Frederick Mosteller -
Stephen E. Fienberg 2007-02-01

One of the best known statisticians of the 20th century, Frederick Mosteller has inspired numerous statisticians and other scientists by his creative approach to statistics and its

applications. This volume collects 40 of his most original and influential papers, capturing the variety and depth of his writings. It is hoped that sharing these writings with a new generation of researchers will inspire them to build upon his insights and efforts.

Model Assisted Survey Sampling Carl-Erik Särndal 2003-10-31

Now available in paperback, this book provides a comprehensive account of survey sampling theory and methodology suitable for students and researchers across a variety of disciplines. It shows how statistical modeling is a vital component of the sampling process and in the choice of estimation technique. The first textbook that systematically extends traditional sampling theory with the aid of a modern model assisted outlook. Covers classical topics as well as areas where significant new developments have taken place.

Model-based Geostatistics - Peter Diggle
2007-05-26

This volume is the first book-length treatment of model-based geostatistics. The text is expository, emphasizing statistical methods and applications rather than the underlying mathematical theory. Analyses of datasets from a range of scientific contexts feature prominently, and simulations are used to illustrate theoretical results. Readers can reproduce most of the computational results in the book by using the authors' software package, geoR, whose usage is illustrated in a computation section at the end of each chapter. The book assumes a working knowledge of classical and Bayesian methods of inference, linear models, and generalized linear models.

Resampling Methods for Dependent Data - S. K. Lahiri 2003-08-07

This book gives a detailed account of bootstrap methods and their properties for dependent data, covering a wide range of topics such as block bootstrap methods, bootstrap methods in the frequency domain, resampling methods for long range dependent data, and resampling

methods for spatial data.

Kirklín/Barratt-Boyes Cardiac Surgery - James K. Kirklín 2012-10-26

Now in its 4th edition, Kirklín/Barratt-Boyes Cardiac Surgery remains your indispensable source for definitive, state-of-the-art answers on every aspect of adult and pediatric cardiac surgery. This dynamic medical reference thoroughly and systematically covers the full range of new and classic surgical procedures-including the latest alternate and minimally invasive surgical techniques-and presents the up-to-date clinical evidence you need to make effective management decisions. Be certain with expert, dependable, accurate answers for every stage of your career from the most comprehensive, definitive text in the field! Get comprehensive coverage of all areas of cardiac surgery, including ischemic, valvular, and congenital heart disease; cardiac tumors; constrictive pericarditis; thoracic aortic surgery; cardiac transplantation; coronary artery disease;

aortic valve disease; cardiac rhythm disturbances; heart failure and transplantation; disease of the thoracic aorta; tetralogy of Fallot; anesthesia; and postoperative care. Stay current with the latest advancements and practices. Comprehensive updates throughout include new information on endovascular management of thoracic aorta disease; new data on clinical outcomes; the most recent minimally invasive procedures; non-invasive CT angiography; new alternative surgical approaches to mitral valve surgery; and many other hot topics! Make the most well-informed decisions and achieve optimal outcomes by exploring each condition's natural history; diagnostic criteria; indications for surgery; operative techniques; and follow-up care. Reference information quickly thanks to a new, streamlined format and easily searchable online access to the complete text, downloadable image library, reference links, and more at expertconsult.com. Visually grasp and better understand critical information with the aid of a

new, full-color design that includes an abundance of detailed charts and graphs. Stay current with the latest advancements and practices. Comprehensive updates throughout include new information on endovascular management of thoracic aorta disease; new data on clinical outcomes; the most recent minimally invasive procedures; non-invasive CT angiography; new alternative surgical approaches to mitral valve surgery; and many other hot topics! Reference information quickly thanks to a new, streamlined format and easily searchable online access to the complete text, downloadable image library, reference links, and more at www.expertconsult.com. Master cardiac surgery with the Gold Standard for Cardiac Surgery - the most definitive and clinically comprehensive resource on cardiologic procedures including latest alternate and minimally invasive surgical procedures *Unified Methods for Censored Longitudinal Data and Causality* Mark J. van der Laan 2003-01-14

These techniques include estimation of regression parameters in the familiar (multivariate) generalized linear regression and multiplicative intensity models. They go beyond standard statistical approaches by incorporating all the observed data to allow for informative censoring, to obtain maximal efficiency, and by developing estimators of causal effects.

Applied Logistic Regression - David W. Hosmer, Jr. 2004-10-28

From the reviews of the First Edition. "An interesting, useful, and well-written book on logistic regression models . . . Hosmer and Lemeshow have used very little mathematics, have presented difficult concepts heuristically and through illustrative examples, and have included references." —Choice "Well written, clearly organized, and comprehensive . . . the authors carefully walk the reader through the estimation of interpretation of coefficients from a wide variety of logistic regression models . . . their careful explication of the quantitative re-

expression of coefficients from these various models is excellent." —Contemporary Sociology
"An extremely well-written book that will certainly prove an invaluable acquisition to the practicing statistician who finds other literature on analysis of discrete data hard to follow or heavily theoretical." —The Statistician
In this revised and updated edition of their popular book, David Hosmer and Stanley Lemeshow continue to provide an amazingly accessible introduction to the logistic regression model while incorporating advances of the last decade, including a variety of software packages for the analysis of data sets. Hosmer and Lemeshow extend the discussion from biostatistics and epidemiology to cutting-edge applications in data mining and machine learning, guiding readers step-by-step through the use of modeling techniques for dichotomous data in diverse fields. Ample new topics and expanded discussions of existing material are accompanied by a wealth of real-world examples-with

extensive data sets available over the Internet.
Inference in Hidden Markov Models - Olivier Cappé 2005-08-04

This book is a comprehensive treatment of inference for hidden Markov models, including both algorithms and statistical theory. Topics range from filtering and smoothing of the hidden Markov chain to parameter estimation, Bayesian methods and estimation of the number of states. In a unified way the book covers both models with finite state spaces and models with continuous state spaces (also called state-space models) requiring approximate simulation-based algorithms that are also described in detail. Many examples illustrate the algorithms and theory. This book builds on recent developments to present a self-contained view.

Statistical Inference for Ergodic Diffusion Processes - Yury A. Kutoyants 2004

The first book in inference for stochastic processes from a statistical, rather than a probabilistic, perspective. It provides a

systematic exposition of theoretical results from over ten years of mathematical literature and presents, for the first time in book form, many new techniques and approaches.

The Design and Analysis of Computer Experiments - Thomas J. Santner 2003-07-30

This book describes methods for designing and analyzing experiments conducted using computer code in lieu of a physical experiment. It discusses how to select the values of the factors at which to run the code (the design of the computer experiment). It also provides techniques for analyzing the resulting data so as to achieve these research goals.

Introduction to Variance Estimation - Kirk Wolter 2003-11-14

Now available in paperback, this book is organized in a way that emphasizes both the theory and applications of the various variance estimating techniques. Results are often presented in the form of theorems; proofs are deleted when trivial or when a reference is

readily available. It applies to large, complex surveys; and to provide an easy reference for the survey researcher who is faced with the problem of estimating variances for real survey data.

Applied Predictive Modeling - Max Kuhn 2013-05-17

Applied Predictive Modeling covers the overall predictive modeling process, beginning with the crucial steps of data preprocessing, data splitting and foundations of model tuning. The text then provides intuitive explanations of numerous common and modern regression and classification techniques, always with an emphasis on illustrating and solving real data problems. The text illustrates all parts of the modeling process through many hands-on, real-life examples, and every chapter contains extensive R code for each step of the process. This multi-purpose text can be used as an introduction to predictive models and the overall modeling process, a practitioner's reference handbook, or as a text for advanced

undergraduate or graduate level predictive modeling courses. To that end, each chapter contains problem sets to help solidify the covered concepts and uses data available in the book's R package. This text is intended for a broad audience as both an introduction to predictive models as well as a guide to applying them. Non-mathematical readers will appreciate the intuitive explanations of the techniques while an emphasis on problem-solving with real data across a wide variety of applications will aid practitioners who wish to extend their expertise. Readers should have knowledge of basic statistical ideas, such as correlation and linear regression analysis. While the text is biased against complex equations, a mathematical background is needed for advanced topics.

Statistical Learning from a Regression Perspective - Richard A. Berk 2008-06-14
Statistical Learning from a Regression Perspective considers statistical learning applications when interest centers on the

conditional distribution of the response variable, given a set of predictors, and when it is important to characterize how the predictors are related to the response. As a first approximation, this can be seen as an extension of nonparametric regression. Among the statistical learning procedures examined are bagging, random forests, boosting, and support vector machines. Response variables may be quantitative or categorical. Real applications are emphasized, especially those with practical implications. One important theme is the need to explicitly take into account asymmetric costs in the fitting process. For example, in some situations false positives may be far less costly than false negatives. Another important theme is to not automatically cede modeling decisions to a fitting algorithm. In many settings, subject-matter knowledge should trump formal fitting criteria. Yet another important theme is to appreciate the limitation of one's data and not apply statistical learning procedures that require

more than the data can provide. The material is written for graduate students in the social and life sciences and for researchers who want to apply statistical learning procedures to scientific and policy problems. Intuitive explanations and visual representations are prominent. All of the analyses included are done in R.

Correlated Data Analysis: Modeling, Analysis and Applications Xue-Kun Song 2007-07-27

This book covers recent developments in correlated data analysis. It utilizes the class of dispersion models as marginal components in the formulation of joint models for correlated data. This enables the book to cover a broader range of data types than the traditional generalized linear models. The reader is provided with a systematic treatment for the topic of estimating functions, and both generalized estimating equations (GEE) and quadratic inference functions (QIF) are studied as special cases. In addition to the discussions on marginal models and mixed-effects models,

this book covers new topics on joint regression analysis based on Gaussian copulas.

Quantitative Methods in Corpus-Based Translation Studies - Michael P. Oakes
2012-03-20

This is a comprehensive guidebook to the quantitative methods needed for Corpus-Based Translation Studies (CBTS). It provides a systematic description of the various statistical tests used in Corpus Linguistics which can be used in translation research. In Part 1, Theoretical Explorations, the interplay between quantitative and qualitative methodologies is explored. Part 2, Essential Corpus Studies, describes how to undertake quantitative studies, with a suitable level of technical and relevant case studies. Part 3, Quantitative Explorations of Literary Translations, looks at translations of classic works by Cao Xueqin, James Joyce and other authors. Finally, Part 4 on Translation Lexis uses a variety of techniques new to translation studies, including multivariate

analysis and game theory. This book is aimed at students and researchers of corpus linguistics, translation studies and quantitative linguistics. It will significantly advance current translation studies in terms of methodological innovation and will fill in an important gap in the development of quantitative methods for interdisciplinary translation studies.

Biostatistics: A Computing Approach -

Stewart Anderson 2011-12-20

The emergence of high-speed computing has facilitated the development of many exciting statistical and mathematical methods in the last 25 years, broadening the landscape of available tools in statistical investigations of complex data. *Biostatistics: A Computing Approach* focuses on visualization and computational approaches associated with both modern and classical techniques. Furthermore, it promotes computing as a tool for performing both analyses and simulations that can facilitate such understanding. As a practical matter, programs

in R and SAS are presented throughout the text. In addition to these programs, appendices describing the basic use of SAS and R are provided. Teaching by example, this book emphasizes the importance of simulation and numerical exploration in a modern-day statistical investigation. A few statistical methods that can be implemented with simple calculations are also worked into the text to build insight about how the methods really work. Suitable for students who have an interest in the application of statistical methods but do not necessarily intend to become statisticians, this book has been developed from *Introduction to Biostatistics II*, which the author taught for more than a decade at the University of Pittsburgh.

Indirect Sampling - Pierre Lavallée 2009-12-21

This book is the reference on indirect sampling and the generalised weight share method. It reviews the different developments done by the author on these subjects. In addition to the underlying theory, the book presents different

possible applications that drive its interest. The reader will find in this book the answer to questions that come, inevitably, when working in a context of indirect sampling.

Principal Component Analysis E.T. Jolliffe
2002-10

The first edition of this book was the first comprehensive text written solely on principal component analysis. The second edition updates and substantially expands the original version, and is once again the definitive text on the subject. It includes core material, current research and a wide range of applications. Its length is nearly double that of the first edition.

Scan Statistics - Joseph Glaz 2001-08-09

In many statistical applications the scientists have to analyze the occurrence of observed clusters of events in time or space. The scientists are especially interested to determine whether an observed cluster of events has occurred by chance if it is assumed that the events are distributed independently and uniformly over

time or space. Applications of scan statistics have been recorded in many areas of science and technology including: geology, geography, medicine, minefield detection, molecular biology, photography, quality control and reliability theory and radio-optics.

Introduction to Empirical Processes and Semiparametric Inference - Michael R. Kosorok 2007-12-29

Kosorok's brilliant text provides a self-contained introduction to empirical processes and semiparametric inference. These powerful research techniques are surprisingly useful for developing methods of statistical inference for complex models and in understanding the properties of such methods. This is an authoritative text that covers all the bases, and also a friendly and gradual introduction to the area. The book can be used as research reference and textbook.

International Journal of Applied Sciences: Current and Future Research Trends

(IJASCFRT) - 2021-12-31

Linear and Generalized Linear Mixed Models and Their Applications Jiming Jiang 2007-05-30

This book covers two major classes of mixed effects models, linear mixed models and generalized linear mixed models. It presents an up-to-date account of theory and methods in analysis of these models as well as their applications in various fields. The book offers a systematic approach to inference about non-Gaussian linear mixed models. Furthermore, it includes recently developed methods, such as mixed model diagnostics, mixed model selection, and jackknife method in the context of mixed models. The book is aimed at students, researchers and other practitioners who are interested in using mixed models for statistical data analysis.

Multiscale Modeling Marco A.R. Ferreira 2007-07-17

This highly useful book contains methodology for

the analysis of data that arise from multiscale processes. It brings together a number of recent developments and makes them accessible to a wider audience. Taking a Bayesian approach allows for full accounting of uncertainty, and also addresses the delicate issue of uncertainty at multiple scales. These methods can handle different amounts of prior knowledge at different scales, as often occurs in practice.

Regression Modeling Strategies - Frank E. Harrell, Jr. 2015-08-14

This highly anticipated second edition features new chapters and sections, 225 new references, and comprehensive R software. In keeping with the previous edition, this book is about the art and science of data analysis and predictive modelling, which entails choosing and using multiple tools. Instead of presenting isolated techniques, this text emphasises problem solving strategies that address the many issues arising when developing multi-variable models using real data and not standard textbook examples.

Regression Modelling Strategies presents full-scale case studies of non-trivial data-sets instead of over-simplified illustrations of each method. These case studies use freely available R functions that make the multiple imputation, model building, validation and interpretation tasks described in the book relatively easy to do. Most of the methods in this text apply to all regression models, but special emphasis is given to multiple regression using generalised least squares for longitudinal data, the binary logistic model, models for ordinal responses, parametric survival regression models and the Cox semi parametric survival model. A new emphasis is given to the robust analysis of continuous dependent variables using ordinal regression. As in the first edition, this text is intended for Masters' or PhD. level graduate students who have had a general introductory probability and statistics course and who are well versed in ordinary multiple regression and intermediate algebra. The book will also serve as a reference

for data analysts and statistical methodologists, as it contains an up-to-date survey and bibliography of modern statistical modelling techniques.

Growth Curve Models and Statistical Diagnostics - Jian-Xin Pan 2002-08-21

This book systematically introduces the theory of the GCM with particular emphasis on their multivariate statistical diagnostics, which are based mainly on recent developments made by the authors and their collaborators. Provided are complete proofs of theorems as well as practical data sets and MATLAB code.

Exact Statistical Methods for Data Analysis - Samaradasa Weerahandi 2003-10-17

Now available in paperback. This book covers some recent developments in statistical inference. The author's main aim is to develop a theory of generalized p-values and generalized confidence intervals and to show how these concepts may be used to make exact statistical inferences in a variety of practical applications.

In particular, they provide methods applicable in problems involving nuisance parameters such as those encountered in comparing two exponential distributions or in ANOVA without the assumption of equal error variances. The generalized procedures are shown to be more powerful in detecting significant experimental results and in avoiding misleading conclusions.

Elements of Multivariate Time Series

Analysis - Gregory C. Reinsel 2003-10-31

Now available in paperback, this book introduces basic concepts and methods useful in the analysis and modeling of multivariate time series data. It concentrates on the time-domain analysis of multivariate time series, and assumes univariate time series analysis, while covering basic topics such as stationary processes and their covariance matrix structure, vector AR, MA, and ARMA models, forecasting, least squares and maximum likelihood estimation for ARMA models, associated likelihood ratio testing procedures.

Information Criteria and Statistical Modeling

Sadanori Konishi 2008

This brilliantly structured and comprehensive volume provides exhaustive explanations of the concepts and philosophy of statistical modeling, together with a wide range of practical and numerical examples.

Regression Modeling Strategies - Frank E. Harrell 2013-03-09

Many texts are excellent sources of knowledge about individual statistical tools, but the art of data analysis is about choosing and using multiple tools. Instead of presenting isolated techniques, this text emphasizes problem solving strategies that address the many issues arising when developing multivariable models using real data and not standard textbook examples. It includes imputation methods for dealing with missing data effectively, methods for dealing with nonlinear relationships and for making the estimation of transformations a formal part of the modeling process, methods for dealing with

"too many variables to analyze and not enough observations," and powerful model validation techniques based on the bootstrap. This text

realistically deals with model uncertainty and its effects on inference to achieve "safe data mining".