

R Book Second Edition

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Chinese translation of Cynthia Kadohata's "Kira-Kira," the 2005 Newbery Medal Winner. Distributed by Tsai Fong Books, Inc.

Statistical Rethinking: A Bayesian Course with Examples in R and Stan builds your knowledge of and confidence in making inferences from data. Reflecting the need for scripting in today's model-based statistics, the book pushes you to perform step-by-step calculations that are usually automated. This unique computational approach ensures that you understand enough of the details to make reasonable choices and interpretations in your own modeling work. The text presents causal inference and generalized linear multilevel models from a simple Bayesian perspective that builds on information theory and maximum entropy. The core material ranges from the basics of regression to advanced multilevel models. It also presents measurement error, missing data, and Gaussian process models for spatial and phylogenetic confounding. The second edition emphasizes the directed acyclic graph (DAG) approach to causal inference, integrating DAGs into many examples. The new edition also contains

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new material on the design of prior distributions, splines, ordered categorical predictors, social relations models, cross-validation, importance sampling, instrumental variables, and Hamiltonian Monte Carlo. It ends with an entirely new chapter that goes beyond generalized linear modeling, showing how domain-specific scientific models can be built into statistical analyses. Features

- Integrates working code into the main text
- Illustrates concepts through worked data analysis examples
- Emphasizes understanding assumptions and how assumptions are reflected in code
- Offers more detailed explanations of the mathematics in optional sections
- Presents examples of using the dagitty R package to analyze causal graphs
- Provides the rethinking R package on the author's website and on GitHub

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. See *What's New in the Second Edition*: Increased emphasis on more idiomatic R provides a grounding in the functionality of base R. Discussions of the use of RStudio helps new R users avoid as many pitfalls as

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possible. Use of knitr package makes code easier to read and therefore easier to reason about. Additional information on computer-intensive approaches motivates the traditional approach. Updated examples and data make the information current and topical. The book has an accompanying package, UsingR, available from CRAN, R's repository of user-contributed packages. The package contains the data sets mentioned in the text (`data(package="UsingR")`), answers to selected problems (`answers()`), a few demonstrations (`demo()`), the errata (`errata()`), and sample code from the text. The topics of this text line up closely with traditional teaching progression; however, the book also highlights computer-intensive approaches to motivate the more traditional approach. The authors emphasize realistic data and examples and rely on visualization techniques to gather insight. They introduce statistics and R seamlessly, giving students the tools they need to use R and the information they need to navigate the sometimes complex world of statistical computing.

Analyzing Baseball Data with R Second Edition introduces R to sabermetricians, baseball enthusiasts, and students interested in exploring the richness of baseball data. It equips you with the necessary skills and software tools to perform all the analysis steps, from importing the data to transforming them into an appropriate format to visualizing the data via graphs to performing a statistical

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analysis. The authors first present an overview of publicly available baseball datasets and a gentle introduction to the type of data structures and exploratory and data management capabilities of R. They also cover the ggplot2 graphics functions and employ a tidyverse-friendly workflow throughout. Much of the book illustrates the use of R through popular sabermetrics topics, including the Pythagorean formula, runs expectancy, catcher framing, career trajectories, simulation of games and seasons, patterns of streaky behavior of players, and launch angles and exit velocities. All the datasets and R code used in the text are available online. New to the second edition are a systematic adoption of the tidyverse and incorporation of Statcast player tracking data (made available by Baseball Savant). All code from the first edition has been revised according to the principles of the tidyverse. Tidyverse packages, including dplyr, ggplot2, tidyr, purrr, and broom are emphasized throughout the book. Two entirely new chapters are made possible by the availability of Statcast data: one explores the notion of catcher framing ability, and the other uses launch angle and exit velocity to estimate the probability of a home run. Through the book's various examples, you will learn about modern sabermetrics and how to conduct your own baseball analyses. Max Marchi is a Baseball Analytics Analyst for the Cleveland Indians. He was a regular contributor to The Hardball Times and Baseball Prospectus

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websites and previously consulted for other MLB clubs. Jim Albert is a Distinguished University Professor of statistics at Bowling Green State University. He has authored or coauthored several books including *Curve Ball* and *Visualizing Baseball* and was the editor of the *Journal of Quantitative Analysis of Sports*. Ben Baumer is an assistant professor of statistical & data sciences at Smith College. Previously a statistical analyst for the New York Mets, he is a co-author of *The Sabermetric Revolution and Modern Data Science with R*. *Applied Spatial Data Analysis with R*, second edition, is divided into two basic parts, the first presenting R packages, functions, classes and methods for handling spatial data. This part is of interest to users who need to access and visualise spatial data. Data import and export for many file formats for spatial data are covered in detail, as is the interface between R and the open source GRASS GIS and the handling of spatio-temporal data. The second part showcases more specialised kinds of spatial data analysis, including spatial point pattern analysis, interpolation and geostatistics, areal data analysis and disease mapping. The coverage of methods of spatial data analysis ranges from standard techniques to new developments, and the examples used are largely taken from the spatial statistics literature. All the examples can be run using R contributed packages available from the CRAN website, with code and additional data sets

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from the book's own website. Compared to the first edition, the second edition covers the more systematic approach towards handling spatial data in R, as well as a number of important and widely used CRAN packages that have appeared since the first edition. This book will be of interest to researchers who intend to use R to handle, visualise, and analyse spatial data. It will also be of interest to spatial data analysts who do not use R, but who are interested in practical aspects of implementing software for spatial data analysis. It is a suitable companion book for introductory spatial statistics courses and for applied methods courses in a wide range of subjects using spatial data, including human and physical geography, geographical information science and geoinformatics, the environmental sciences, ecology, public health and disease control, economics, public administration and political science. The book has a website where complete code examples, data sets, and other support material may be found: <http://www.asdar-book.org>. The authors have taken part in writing and maintaining software for spatial data handling and analysis with R in concert since 2003.

Supplying a breadth and depth of coverage beyond that found in most traditional texts, *Introduction to Human Factors and Ergonomics for Engineers, Second Edition* presents and integrates important methods and tools used in the fields of

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Industrial Engineering, Human Factors and Ergonomics to design and improve jobs, tasks and products. It presents these topics with a practical, applied orientation suitable for engineering undergraduate students. See What's New in the Second Edition: Revised order of chapters to group together topics related to the physical and cognitive aspects of human-integrated systems Substantially updated material emphasizes the design of products people work with, tasks or jobs people perform, and environments in which people live The book has sufficient material to be used in its entirety for a two semester sequence of classes, or in part for a single semester course, focusing on selected topics covered in the text. The authors provide a set of guidelines and principles for the design and analysis of human-integrated systems and highlights their application to industry and service systems. It addresses the topics of human factors, work measurement and methods improvement, and product design an approachable style. The common thread throughout the book is on how better "human factors" can lead to improved safety, comfort, enjoyment, acceptance, and effectiveness in all application arenas. Packed with cases studies and examples, readers can use well beyond the classroom and into their professional lives.

Reflects the latest applied research and features state-of-the-art software for building and solving spreadsheet optimization models Thoroughly updated to

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reflect the latest topical and technical advances in the field, *Optimization Modeling with Spreadsheets, Second Edition* continues to focus on solving real-world optimization problems through the creation of mathematical models and the use of spreadsheets to represent and analyze those models. Developed and extensively classroom-tested by the author, the book features a systematic approach that equips readers with the skills to apply optimization tools effectively without the need to rely on specialized algorithms. This new edition uses the powerful software package Risk Solver Platform (RSP) for optimization, including its Evolutionary Solver, which employs many recently developed ideas for heuristic programming. The author provides expanded coverage of integer programming and discusses linear and nonlinear programming using a systematic approach that emphasizes the use of spreadsheet-based optimization tools. The Second Edition also features: Classifications for the various problem types, providing the reader with a broad framework for building and recognizing optimization models Network models that allow for a more general form of mass balance A systematic introduction to Data Envelopment Analysis (DEA) The identification of qualitative patterns in order to meaningfully interpret linear programming solutions An introduction to stochastic programming and the use of RSP to solve problems of this type Additional examples, exercises, and cases

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have been included throughout, allowing readers to test their comprehension of the material. In addition, a related website features Microsoft Office® Excel files to accompany the figures and data sets in the book. With its accessible and comprehensive presentation, *Optimization Modeling with Spreadsheets, Second Edition* is an excellent book for courses on deterministic models, optimization, and spreadsheet modeling at the upper-undergraduate and graduate levels. The book can also serve as a reference for researchers, practitioners, and consultants working in business, engineering, operations research, and management science.

This is a comprehensive and detailed introductory Korean textbook and language learning package. Korean is now the 15th most popular language taught at American universities. This new edition of *Elementary Korean*, the most comprehensive and detailed introductory Korean textbook available, offers beginning learners of Korean everything they need to learn the language effectively. Perfect for a first-year university-level course use or for the independent language learner. No prior knowledge of the language is necessary. The new format, now with dozens of illustrations, presents Korean vocabulary and Korean grammar in an accessible and understandable manner while extensive conversations and exercises help to reinforce the Korean language

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and build reading and listening comprehension. This edition includes: Downloadable audio and a dedicated website. Rich and highly nuanced examples with brand new illustrations. Detailed but on-technical grammar notes, ample writing exercises with an accompanying answer key. Detailed examples of authentic dialogue. Highly technical grammar notes. Plenty of writing practice. Dialogues, reading texts, and written exercises are in Hangul, the Korean alphabet, so students are quickly able to read and write authentic Korean. Layered lessons are designed to build on each other, making Korean easy to learn from the most popular introductory Korean language textbook available. Included is downloadable audio that helps learners to speak like a native and a web-based practice component through the University of British Columbia that can help students to learn Korean even beyond the pages of this book. According to the Modern Language Association, enrollment in Korean in American universities is growing rapidly. Available separately is the companion Elementary Korean Workbook. This helpful workbook will assist you in practicing and polishing your Korean language skills. Each lesson supplements the corresponding lesson in the textbook. There are ten activities per lesson, offering a range of exercises and practice opportunities to enable you to achieve proficiency in everyday, conversational Korean.

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Providing more than twice the content of the original edition, this new edition is the premier source on the selection, development, and provision of safe, high-quality, and cost-effective electric utility distribution systems, and it promises vast improvements in system reliability and layout by spanning every aspect of system planning including load forecasting, scheduling, performance, and economics. Responding to the evolving needs of electric utilities, Power Distribution Planning Reference Book presents an abundance of real-world examples, procedural and managerial issues, and engineering and analytical methodologies that are crucial to efficient and enhanced system performance.

Explore over 110 recipes to analyze data and build predictive models with simple and easy-to-use R code

About This Book* Apply R to simplify predictive modeling with short and simple code* Use machine learning to solve problems ranging from small to big data* Build a training and testing dataset, applying different classification methods.

Who This Book Is For This book is for data science professionals, data analysts, or people who have used R for data analysis and machine learning who now wish to become the go-to person for machine learning with R. Those who wish to improve the efficiency of their machine learning models and need to work with different kinds of data set will find this book very insightful.

What You Will Learn* Create and inspect transaction datasets and

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perform association analysis with the Apriori algorithm* Visualize patterns and associations using a range of graphs and find frequent item-sets using the Eclat algorithm* Compare differences between each regression method to discover how they solve problems* Detect and impute missing values in air quality data* Predict possible churn users with the classification approach* Plot the autocorrelation function with time series analysis* Use the Cox proportional hazards model for survival analysis* Implement the clustering method to segment customer data* Compress images with the dimension reduction method* Incorporate R and Hadoop to solve machine learning problems on big data

In DetailBig data has become a popular buzzword across many industries. An increasing number of people have been exposed to the term and are looking at how to leverage big data in their own businesses, to improve sales and profitability. However, collecting, aggregating, and visualizing data is just one part of the equation. Being able to extract useful information from data is another task, and a much more challenging one. Machine Learning with R Cookbook, Second Edition uses a practical approach to teach you how to perform machine learning with R. Each chapter is divided into several simple recipes. Through the step-by-step instructions provided in each recipe, you will be able to construct a predictive model by using a variety of machine learning packages. In this book,

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you will first learn to set up the R environment and use simple R commands to explore data. The next topic covers how to perform statistical analysis with machine learning analysis and assess created models, covered in detail later on in the book. You'll also learn how to integrate R and Hadoop to create a big data analysis platform. The detailed illustrations provide all the information required to start applying machine learning to individual projects. With Machine Learning with R Cookbook, machine learning has never been easier. Style and approach This is an easy-to-follow guide packed with hands-on examples of machine learning tasks. Each topic includes step-by-step instructions on tackling difficulties faced when applying R to machine learning.

The book that fills the practitioner need for a distillation of the most important tools and concepts of corporate finance In today's competitive business environment, companies must find innovative ways to enable rapid and sustainable growth not just to survive, but to thrive. Corporate Finance: A Practical Approach is designed to help financial analysts, executives, and investors achieve this goal with a practice-oriented distillation of the most important tools and concepts of corporate finance. Updated for a post-financial crisis environment, the Second Edition provides coverage of the most important issues surrounding modern corporate finance for the new global economy:

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Preserves the hallmark conciseness of the first edition while offering expanded coverage of key topics including dividend policy, share repurchases, and capital structure Current, real-world examples are integrated throughout the book to provide the reader with a concrete understanding of critical business growth concepts Explanations and examples are rigorous and global, but make minimal use of mathematics Each chapter presents learning objectives which highlight key material, helping the reader glean the most effective business advice possible Written by the experts at CFA Institute, the world's largest association of professional investment managers Created for current and aspiring financial professionals and investors alike, Corporate Finance focuses on the knowledge, skills, and abilities necessary to succeed in today's global corporate world. Authoritative and comprehensive, this is the leading text and professional resource on using geographic information systems (GIS) to analyze and address public health problems. Basic GIS concepts and tools are explained, including ways to access and manage spatial databases. The book presents state-of-the-art methods for mapping and analyzing data on population, health events, risk factors, and health services, and for incorporating geographical knowledge into planning and policy. Numerous maps, diagrams, and real-world applications are featured. The companion Web page provides lab exercises with data that can be

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downloaded for individual or course use. New to This Edition *Incorporates major technological advances, such as Internet-based mapping systems and the rise of data from cell phones and other GPS-enabled devices. *Chapter on health disparities. *Expanded coverage of public participation GIS. *Companion Web page has all-new content. *Goes beyond the United States to encompass an international focus.

2020- Second Edition, updated version. Get your copy!! Why Learn R? What are the reasons to learn R for Data Science? In this small textbook recommended for absolute beginners, the author tried to answer these types of questions. After reading this guide, maybe in one or two days, you will learn the basics of R programming and its utility for each Data Scientist. Indeed, R is a programming language and software environment for statistical analysis, graphics representation, and reporting. If you are trying to understand the R programming language as a beginner, this short book will give you enough understanding of almost all the concepts of the R language. The author will guide you through examples, how to program in R and how to use R for effective data analysis. Get your copy Now! Book Objectives This book is about R programming. The following are the objectives of the author: To familiarize you with the basics of R programming language. To help you understand the various fields where R can

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be applied and its use cases in each field. To equip you with R programming skills, both beginner and advanced skills. To introduce you to R programming for data analysis. To introduce you to R programming for machine learning. To help you understand and appreciate the power of R in statistical computing, data analysis, and scientific research. Who this Book is for? Anybody who is a complete beginner to R Programming. Anybody in need of advancing their R Programming skills. Professionals in computer programming. Professors, lecturers or tutors who are looking to find better ways to explain R programming to their students in the simplest and easiest way. Students and academicians, especially those focusing on R, Data Analysis, Machine Learning, computer science, and Databases development. Requirements The author expects you to have a computer installed with an operating system such as Linux, Windows or Mac OS X. What is inside the book? R BASICS R DATA TYPES R VARIABLES AND CONSTANTS R OPERATORS DECISION MAKING IN R R LOOPS R FUNCTIONS R CLASSES AND OBJECTS R FOR DATA SCIENCE R FOR MACHINE LEARNING From the Back Cover. R programming language is one of the most popular languages used by statisticians, data analysts, researchers to retrieve, clean, analyze, visualize and present data. This is a comprehensive book on how to get started with R programming, why you should learn it and how

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you can learn it. Daniel Bell begins by introducing the readers to the foundations of the R programming language. The aim is to help you understand, how the R interpreter works, the origin of the name R, how to set up the R programming environment, etc. The author has discussed the process of installing R on Windows, Linux and Mac OS. Moreover, the author has explored the basics of R programming including writing comments, using the R console, creating R script files, etc. The various features provided by R have been discussed in depth, including data types, variables, loops, decision making, functions, operators, classes, and objects, etc. The author has also discussed R for data science and R for machine learning. The book has been organized into chapters, with each chapter having many sub-chapters. R code scripts have been provided, alongside thorough explanations of the code and images showing the expected output upon the execution of every script. Get your copy

An informatively illustrated guide to business principles by a professor, entrepreneur, consultant, executive, and Harvard Business School graduate. Success in business--and in business school--calls for a broad knowledge base and the ability to turn it into action. This accessible book provides a thorough grounding in the principles most essential to the study and practice of business, from corporate organization to maintaining customer satisfaction. Lessons

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is concise and accurate, based on proven methods and techniques, to deliver the above results. The Discus, King of the Aquarium is a highly evolved species of the Cichlidae (tooth carp) Family and will challenge any Aquarist, even tank bred species. This book will not produce any quick fixes, or silver bullets to keeping symphysodon, whom are a very highly evolved sensitive species. But will provide the secrets to successfully keeping the species, if the valuable information found in this book is followed to the letter. Natural Law teaches us to "evolve and refine" when studying quantum mechanics and natural branching, in other words stealth, efficiency and risk aversion. Such outcomes and results only ever come from following the covenant of Natural Law when one seeks "simplistic perfection" in all that we do!

CHAPTERS INSIDE THIS BOOK: INTRODUCTION CHAPTER ONE A Little Background Discus and their Natural Environment and Origin of the Species CHAPTER TWO The Wild Discus Species CHAPTER THREE The Importance of the Correct Aquarium CHAPTER FOUR A Guide to Fish Food and Suitability for Discus CHAPTER FIVE Discus Prepared Super Foods and Recipes CHAPTER SIX Growing and Hatching Your Own Brine Shrimp CHAPTER SEVEN The Requirements for Discus Fish Filtration CHAPTER EIGHT The Genetics and Different Strains of Discus Fish CHAPTER NINE The Lighting and Electrical Needs CHAPTER TEN Collecting and Purchasing the

Correct Fish CHAPTER ELEVEN The Correct Water Conditions and Techniques
CHAPTER TWELVE The Spawning of Symphysodon CHAPTER THIRTEEN
Rearing and Raising Healthy Discus to Adulthood CHAPTER FOURTEEN The
Diseases and the Problems of the Species CHAPTER FIFTEEN Aquarists
Essential Reference Tables CHAPTER SIXTEEN Author's Concluding Points
An engaging presentation of pronoun and preposition usage in English,
combined with extensive practice for beginning and intermediate ESL learners
Practice Makes Perfect: English Pronouns and Prepositions offers a detailed
examination of these two essential aspects of grammar, which language learners
need to master to communicate with confidence. This book provides clear
explanations of the usage of pronouns and prepositions, followed by practical
examples illustrating and clarifying each point. A variety of exercises provide
ample opportunity to practice.

Updated to reflect the new features of Stata 11, *A Gentle Introduction to Stata*,
Third Edition continues to help new Stata users become proficient in Stata. After
reading this introductory text, you will be able to enter, build, and manage a data
set as well as perform fundamental statistical analyses. New to the Third Edition
A new chapter on the analysis of missing data and the use of multiple-imputation
methods Extensive revision of the chapter on ANOVA Additional material on the

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application of power analysis The book covers data management; good work habits, including the use of basic do-files; basic exploratory statistics, including graphical displays; and analyses using the standard array of basic statistical tools, such as correlation, linear and logistic regression, and parametric and nonparametric tests of location and dispersion. Rather than splitting these topics by their Stata implementation, the material on graphics and postestimation are woven into the text in a natural fashion. The author teaches Stata commands by using the menus and dialog boxes while still stressing the value of do-files. Each chapter includes exercises and real data sets are used throughout.

Designed to meet the needs of wide-ability classes, the Camarades French course is divided into four units and fulfils the criteria of the National Curriculum/5-14 Guidelines, fully preparing all pupils for GCSE/Standard Grade examinations. The Teacher's Book contains an overview of each unit; offers clear, concise teaching notes; provides notes for the four assessment sections and the answers to all Pupil's Book exercises; and comprises tapescripts in sequence that are highlighted for ease of reference.

Developing an information security program that adheres to the principle of security as a business enabler must be the first step in an enterprise's effort to build an effective security program. Following in the footsteps of its bestselling

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predecessor, Information Security Fundamentals, Second Edition provides information security professionals with a clear understanding of the fundamentals of security required to address the range of issues they will experience in the field. The book examines the elements of computer security, employee roles and responsibilities, and common threats. It discusses the legal requirements that impact security policies, including Sarbanes-Oxley, HIPAA, and the Gramm-Leach-Bliley Act. Detailing physical security requirements and controls, this updated edition offers a sample physical security policy and includes a complete list of tasks and objectives that make up an effective information protection program. Includes ten new chapters Broadens its coverage of regulations to include FISMA, PCI compliance, and foreign requirements Expands its coverage of compliance and governance issues Adds discussions of ISO 27001, ITIL, COSO, COBIT, and other frameworks Presents new information on mobile security issues Reorganizes the contents around ISO 27002 The book discusses organization-wide policies, their documentation, and legal and business requirements. It explains policy format with a focus on global, topic-specific, and application-specific policies. Following a review of asset classification, it explores access control, the components of physical security, and the foundations and processes of risk analysis and risk management. The text concludes by

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describing business continuity planning, preventive controls, recovery strategies, and how to conduct a business impact analysis. Each chapter in the book has been written by a different expert to ensure you gain the comprehensive understanding of what it takes to develop an effective information security program.

Probability Methods for Cost Uncertainty Analysis: A Systems Engineering Perspective, Second Edition gives you a thorough grounding in the analytical methods needed for modeling and measuring uncertainty in the cost of engineering systems. This includes the treatment of correlation between the cost of system elements, how to present the analysis to decision-makers, and the use of bivariate probability distributions to capture joint interactions between a system's cost and schedule. Analytical techniques from probability theory are stressed, along with the Monte Carlo simulation method. Numerous examples and case discussions illustrate the practical application of theoretical concepts. While the original chapters from the first edition remain unchanged, this second edition contains new material focusing on the application of theory to problems encountered in practice. Highlights include the use of GERM to build development and production cost estimating relationships as well as the eSBM, which was developed from a need in the community to offer simplified analytical alternatives to advanced probability-based approaches. The book also lists the major technical works of the late Dr. Stephen A. Book, a mathematician and world-renowned cost analyst whose contributions advanced the theory and practice of cost risk analysis.

A modern classic, A History of Christian Theology offers a concise yet complete chronicle of

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the whole of Christian theology, from its background in the history of Israel to the liberation and postliberal theologies of recent years. This updated thirtieth anniversary includes expanded treatments of theological developments at the end of the twentieth century, and preliminary trajectories for theology in the twenty-first century. It also includes updated bibliographies and revised chapters on important innovations in biblical studies, and their impact on theology. This updated and revised edition will continue to aid the work of both students and faculty for years to come. William C. Placher is to be congratulated for having done what many would have considered impossible. In slightly more than 300 pages he has chronicled the whole history of Christian theology, from its background in the history of Israel to the various modes of liberation theology in the late 20th century. Moreover, he has touched almost all of the important bases and has dealt with significant figures, issues, movements in an incisive and illuminating manner. This intellectual history, a story of people and their ideas, is a delight to read. I predict it will be widely used not only in college and seminaries, but also in lay institutes and study groups. -- John D. Godsey in *The Christian Century*

Developed from celebrated Harvard statistics lectures, *Introduction to Probability* provides essential language and tools for understanding statistics, randomness, and uncertainty. The book explores a wide variety of applications and examples, ranging from coincidences and paradoxes to Google PageRank and Markov chain Monte Carlo (MCMC). Additional application areas explored include genetics, medicine, computer science, and information theory. The authors present the material in an accessible style and motivate concepts using real-world examples. Throughout, they use stories to uncover connections between the fundamental distributions in statistics and conditioning to reduce complicated problems to

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manageable pieces. The book includes many intuitive explanations, diagrams, and practice problems. Each chapter ends with a section showing how to perform relevant simulations and calculations in R, a free statistical software environment. The second edition adds many new examples, exercises, and explanations, to deepen understanding of the ideas, clarify subtle concepts, and respond to feedback from many students and readers. New supplementary online resources have been developed, including animations and interactive visualizations, and the book has been updated to dovetail with these resources.

Concentrating on the "nuts and bolts" of writing ray tracing programs, this new and revised edition emphasizes practical and implementation issues and takes the reader through all the details needed to write a modern rendering system. Most importantly, the book adds many C++ code segments, and adds new details to provide the reader with a better intuitive understanding of ray tracing algorithms.

Get Up to Speed on Many Types of Adaptive Designs Since the publication of the first edition, there have been remarkable advances in the methodology and application of adaptive trials. Incorporating many of these new developments, Adaptive Design Theory and Implementation Using SAS and R, Second Edition offers a detailed framework to understand the use of various adaptive design methods in clinical trials. New to the Second Edition Twelve new chapters covering blinded and semi-blinded sample size reestimation design, pick-the-winners design, biomarker-informed adaptive design, Bayesian designs, adaptive multiregional trial design, SAS and R for group sequential design, and much more More analytical methods for K-stage adaptive designs, multiple-endpoint adaptive design, survival modeling, and adaptive treatment switching New material on sequential parallel designs with rerandomization and the skeleton

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approach in adaptive dose-escalation trials Twenty new SAS macros and R functions Enhanced end-of-chapter problems that give readers hands-on practice addressing issues encountered in designing real-life adaptive trials Covering even more adaptive designs, this book provides biostatisticians, clinical scientists, and regulatory reviewers with up-to-date details on this innovative area in pharmaceutical research and development. Practitioners will be able to improve the efficiency of their trial design, thereby reducing the time and cost of drug development.

Quickly and Easily Write Dynamic Documents Suitable for both beginners and advanced users, *Dynamic Documents with R and knitr, Second Edition* makes writing statistical reports easier by integrating computing directly with reporting. Reports range from homework, projects, exams, books, blogs, and web pages to virtually any documents related to statistical graphics, computing, and data analysis. The book covers basic applications for beginners while guiding power users in understanding the extensibility of the knitr package. New to the Second Edition A new chapter that introduces R Markdown v2 Changes that reflect improvements in the knitr package New sections on generating tables, defining custom printing methods for objects in code chunks, the C/Fortran engines, the Stan engine, running engines in a persistent session, and starting a local server to serve dynamic documents *Boost Your Productivity in Statistical Report Writing and Make Your Scientific Computing with R Reproducible* Like its highly praised predecessor, this edition shows you how to improve your efficiency in writing reports. The book takes you from program output to publication-quality reports, helping you fine-tune every aspect of your report.

Widely regarded as the standard text on development geography, this volume examines the

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nature and causes of global inequality and critically analyzes contemporary approaches to economic development across the third world. Students gain a deeper understanding of the interacting dynamics of culture, gender, race, and class; biophysical factors, such as climate, population, and natural resources; and economic and political processes "all of which have led to the present-day disparities between the first and third worlds. Numerous examples, sidebars, and figures illustrate how people in the global South are experiencing and contesting the forces of globalization. New to This Edition Updated to reflect a decade of economic, political, and social changes Extensively revised; more fully integrates postcolonial and feminist perspectives Broadens the prior edition's focus on Africa with examples from around the world A chapter on the promises and pitfalls of sustainable development.

Did you know. . . . that arson has been described as the fastest-growing crime in America? . . . that arson is the most expensive crime committed? . . . that over 8 billion dollars was estimated lost due to fires in 1994? . . . that an estimated 86,000 structure fires of incendiary or suspicious origin were reported in 1994? David Redsicker provides these statistics and much more, including practical methods, information, and advice for investigating these types of crimes, in *Practical Fire and Arson Investigation, Second Edition*. Extensively rewritten second edition of this practical manual - More than 40% new material! *Practical Fire and Arson Investigation, Second Edition* is a significantly revised, updated, and expanded new edition of this best-selling book in the *Practical Aspects of*

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Criminal and Forensic Investigations series, edited by Vernon Geberth. As in the first edition, specific details on the basic principles are presented, and advanced applied techniques for conducting a thorough fire and arson investigation are detailed. New topics covered in the Second Edition include: Extensively rewritten chapters on determining origin and cause, eliminating accidental fire causes, investigating fatal fires and vehicular fires, and documenting the fire/crime scene
Fire scene photography using "painting with light"
Importance of evidence preservation and analysis in civil litigation of liability and product defects
Summary R in Action, Second Edition presents both the R language and the examples that make it so useful for business developers. Focusing on practical solutions, the book offers a crash course in statistics and covers elegant methods for dealing with messy and incomplete data that are difficult to analyze using traditional methods. You'll also master R's extensive graphical capabilities for exploring and presenting data visually. And this expanded second edition includes new chapters on time series analysis, cluster analysis, and classification methodologies, including decision trees, random forests, and support vector machines. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Business pros and researchers thrive on data, and R speaks the language of data analysis. R is

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a powerful programming language for statistical computing. Unlike general-purpose tools, R provides thousands of modules for solving just about any data-crunching or presentation challenge you're likely to face. R runs on all important platforms and is used by thousands of major corporations and institutions worldwide. About the Book R in Action, Second Edition teaches you how to use the R language by presenting examples relevant to scientific, technical, and business developers. Focusing on practical solutions, the book offers a crash course in statistics, including elegant methods for dealing with messy and incomplete data. You'll also master R's extensive graphical capabilities for exploring and presenting data visually. And this expanded second edition includes new chapters on forecasting, data mining, and dynamic report writing. What's Inside Complete R language tutorial Using R to manage, analyze, and visualize data Techniques for debugging programs and creating packages OOP in R Over 160 graphs About the Author Dr. Rob Kabacoff is a seasoned researcher and teacher who specializes in data analysis. He also maintains the popular Quick-R website at statmethods.net. Table of Contents PART 1 GETTING STARTED Introduction to R Creating a dataset Getting started with graphs Basic data management Advanced data management PART 2 BASIC METHODS Basic graphs Basic statistics PART 3 INTERMEDIATE METHODS

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Regression Analysis of variance Power analysis Intermediate graphs Resampling statistics and bootstrapping PART 4 ADVANCED METHODS Generalized linear models Principal components and factor analysis Time series Cluster analysis Classification Advanced methods for missing data PART 5 EXPANDING YOUR SKILLS Advanced graphics with ggplot2 Advanced programming Creating a package Creating dynamic reports Advanced graphics with the lattice package available online only from manning.com/kabacoff2

Get to grips with pandas--a versatile and high-performance Python library for data manipulation, analysis, and discovery About This Book* Get comfortable using pandas and Python as an effective data exploration and analysis tool* Explore pandas through a framework of data analysis, with an explanation of how pandas is well suited for the various stages in a data analysis process* A comprehensive guide to pandas with many of clear and practical examples to help you get up and using pandas Who This Book Is For This book is ideal for data scientists, data analysts, Python programmers who want to plunge into data analysis using pandas, and anyone with a curiosity about analyzing data. Some knowledge of statistics and programming will be helpful to get the most out of this book but not strictly required. Prior exposure to pandas is also not required. What You Will Learn* Understand how data analysts and scientists think about of the

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processes of gathering and understanding data* Learn how pandas can be used to support the end-to-end process of data analysis* Use pandas Series and DataFrame objects to represent single and multivariate data* Slicing and dicing data with pandas, as well as combining, grouping, and aggregating data from multiple sources* How to access data from external sources such as files, databases, and web services* Represent and manipulate time-series data and the many of the intricacies involved with this type of data* How to visualize statistical information* How to use pandas to solve several common data representation and analysis problems within finance

In Detail You will learn how to use pandas to perform data analysis in Python. You will start with an overview of data analysis and iteratively progress from modeling data, to accessing data from remote sources, performing numeric and statistical analysis, through indexing and performing aggregate analysis, and finally to visualizing statistical data and applying pandas to finance. With the knowledge you gain from this book, you will quickly learn pandas and how it can empower you in the exciting world of data manipulation, analysis and science.

Style and approach* Step-by-step instruction on using pandas within an end-to-end framework of performing data analysis* Practical demonstration of using Python and pandas using interactive and incremental examples

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The Living Landscape is a manifesto, resource, and textbook for architects, landscape architects, environmental planners, students, and others involved in creating human communities. Since its first edition, published in 1990, it has taught its readers how to develop new built environments while conserving natural resources. No other book presents such a comprehensive approach to planning that is rooted in ecology and design. And no other book offers a similar step-by-step method for planning with an emphasis on sustainable development. This second edition of The Living Landscape offers Frederick Steiner's design-oriented ecological methods to a new generation of students and professionals. The Living Landscape offers

- a systematic, highly practical approach to landscape planning that maximizes ecological objectives, community service, and citizen participation
- more than 20 challenging case studies that demonstrate how problems were met and overcome, from rural America to large cities
- scores of checklists and step-by-step guides
- hands-on help with practical zoning, land use, and regulatory issues
- coverage of major advances in GIS technology and global sustainability standards
- more than 150 illustrations.

As Steiner emphasizes throughout this book, all of us have a responsibility to the

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Earth and to our fellow residents on this planet to plan with vision. We are merely visiting this planet, he notes; we should leave good impressions.

Over 85 recipes to help you complete real-world data science projects in R and Python

About This Book* Tackle every step in the data science pipeline and use it to acquire, clean, analyze, and visualize your data* Get beyond the theory and implement real-world projects in data science using R and Python* Easy-to-follow recipes will help you understand and implement the numerical computing concepts

Who This Book Is For If you are an aspiring data scientist who wants to learn data science and numerical programming concepts through hands-on, real-world project examples, this is the book for you. Whether you are brand new to data science or you are a seasoned expert, you will benefit from learning about the structure of real-world data science projects and the programming examples in R and Python.

What You Will Learn* Learn and understand the installation procedure and environment required for R and Python on various platforms* Prepare data for analysis by implement various data science concepts such as acquisition, cleaning and munging through R and Python* Build a predictive model and an exploratory model* Analyze the results of your model and create reports on the acquired data* Build various tree-based methods and Build random forest

In Detail As increasing amounts of data are generated each year,

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the need to analyze and create value out of it is more important than ever. Companies that know what to do with their data and how to do it well will have a competitive advantage over companies that don't. Because of this, there will be an increasing demand for people that possess both the analytical and technical abilities to extract valuable insights from data and create valuable solutions that put those insights to use. Starting with the basics, this book covers how to set up your numerical programming environment, introduces you to the data science pipeline, and guides you through several data projects in a step-by-step format. By sequentially working through the steps in each chapter, you will quickly familiarize yourself with the process and learn how to apply it to a variety of situations with examples using the two most popular programming languages for data analysis--R and Python. Style and approach This step-by-step guide to data science is full of hands-on examples of real-world data science tasks. Each recipe focuses on a particular task involved in the data science pipeline, ranging from reading the dataset to analytics and visualization

An accessible and self-contained introduction to statistical models--now in a modernized new edition Generalized, Linear, and Mixed Models, Second Edition provides an up-to-date treatment of the essential techniques for developing and applying a wide variety of statistical models. The book presents thorough and

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unified coverage of the theory behind generalized, linear, and mixed models and highlights their similarities and differences in various construction, application, and computational aspects. A clear introduction to the basic ideas of fixed effects models, random effects models, and mixed models is maintained throughout, and each chapter illustrates how these models are applicable in a wide array of contexts. In addition, a discussion of general methods for the analysis of such models is presented with an emphasis on the method of maximum likelihood for the estimation of parameters. The authors also provide comprehensive coverage of the latest statistical models for correlated, non-normally distributed data. Thoroughly updated to reflect the latest developments in the field, the Second Edition features: A new chapter that covers omitted covariates, incorrect random effects distribution, correlation of covariates and random effects, and robust variance estimation A new chapter that treats shared random effects models, latent class models, and properties of models A revised chapter on longitudinal data, which now includes a discussion of generalized linear models, modern advances in longitudinal data analysis, and the use between and within covariate decompositions Expanded coverage of marginal versus conditional models Numerous new and updated examples With its accessible style and wealth of illustrative exercises, *Generalized, Linear, and Mixed Models*,

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Second Edition is an ideal book for courses on generalized linear and mixed models at the upper-undergraduate and beginning-graduate levels. It also serves as a valuable reference for applied statisticians, industrial practitioners, and researchers.

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