
The R Book

Organize, Test, Document, and Share Your Code
 Probability with R
 A Point-and-Click Interface for R
 Statistical Computing
 An Introduction with Computer Science Applications
 SAS and R
 Mathematical Statistics with Resampling and R
 A Course in Statistics with R
 Analyzing Baseball Data with R, Second Edition
 with Applications in R
 Statistics
 An Introduction using R
 Fundamentals of Programming and Statistical Analysis
 Reproducible Research with R and RStudio
 R for Data Science
 Data Management, Statistical Analysis, and Graphics, Second Edition
 Statistics and Data with R
 The R Book
 A Bayesian Course with Examples in R and Stan
 Proven Recipes for Data Analysis, Statistics, and Graphics
 A Book for Data Scientists
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 Forecasting: principles and practice
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 Advanced R, Second Edition
 Proven Recipes for Data Analysis, Statistics, and Graphics
 Statistics with R
 A First Course in Programming and Statistics
 The Book of R
 An Applied Approach Through Examples
 Import, Tidy, Transform, Visualize, and Model Data
 Learning Statistics with R
 The Art of Excavating Data for Knowledge Discovery
 Advanced R
 The Statistical Programming Language
 R Cookbook
 Using the R Commander

The R Book

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ALEXANDER BRYSON

Organize, Test, Document, and Share Your Code CRC Press

An Essential Reference for Intermediate and Advanced R Programmers 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 This book not only helps current R users become R programmers but also shows existing programmers what's special about R. Intermediate R programmers can dive deeper into R and learn new strategies for solving diverse problems while programmers from other languages can learn the details of R and understand why R works the way it does.
Probability with R CRC Press
 R, an Open Source software, has become the de facto statistical computing environment. It has an excellent collection of data manipulation and graphics capabilities. It is extensible and comes with a large number of packages that allow statistical analysis at all levels - from

simple to advanced - and in numerous fields including Medicine, Genetics, Biology, Environmental Sciences, Geology, Social Sciences and much more. The software is maintained and developed by academicians and professionals and as such, is continuously evolving and up to date. Statistics and Data with R presents an accessible guide to data manipulations, statistical analysis and graphics using R. Assuming no previous knowledge of statistics or R, the book includes: A comprehensive introduction to the R language. An integrated approach to importing and preparing data for analysis, exploring and analyzing the data, and presenting results. Over 300 examples, including detailed explanations of the R scripts used throughout. Over 100 moderately large data sets from disciplines ranging from Biology, Ecology

and Environmental Science to Medicine, Law, Military and Social Sciences. A parallel discussion of analyses with the normal density, proportions (binomial), counts (Poisson) and bootstrap methods. Two extensive indexes that include references to every R function (and its arguments and packages used in the book) and to every introduced concept. [A Point-and-Click Interface for R](#) CRC Press Integrates the theory and applications of statistics using R A Course in Statistics with R has been written to bridge the gap between theory and applications and explain how mathematical expressions are converted into R programs. The book has been primarily designed as a useful companion for a Masters student during each semester of the course, but will also help applied statisticians in revisiting the underpinnings of the subject. With this dual goal in mind, the book begins with R basics and quickly covers visualization and exploratory analysis. Probability and statistical inference, inclusive of classical, nonparametric, and Bayesian schools, is developed with definitions, motivations, mathematical expression and R programs in a way which will help the reader to understand the mathematical development as well as R implementation. Linear regression models, experimental designs, multivariate analysis, and categorical data analysis are treated in a way which makes effective use of visualization techniques and the related statistical techniques underlying them through practical applications, and hence helps the reader to achieve a clear understanding of the associated statistical models. Key features: Integrates R basics with statistical concepts Provides graphical presentations inclusive of mathematical expressions Aids understanding of limit theorems of probability with and without the simulation approach Presents detailed algorithmic development of statistical models from scratch Includes practical applications with over 50 data sets [Statistical Computing](#) Lulu.com Newcomers to R are often intimidated by the command-line interface, the vast number of functions and packages, or the processes of importing data and performing a simple statistical analysis. The R Primer provides a collection of concise examples and solutions to R problems frequently encountered by new users of this statistical software. This new edition adds coverage of R Studio and reproducible research. [An Introduction with Computer Science Applications](#) John Wiley & Sons Provides a comprehensive introduction to probability with an emphasis on

computing-related applications This self-contained new and extended edition outlines a first course in probability applied to computer-related disciplines. As in the first edition, experimentation and simulation are favoured over mathematical proofs. The freely downloadable statistical programming language R is used throughout the text, not only as a tool for calculation and data analysis, but also to illustrate concepts of probability and to simulate distributions. The examples in [Probability with R: An Introduction with Computer Science Applications, Second Edition](#) cover a wide range of computer science applications, including: testing program performance; measuring response time and CPU time; estimating the reliability of components and systems; evaluating algorithms and queuing systems. Chapters cover: The R language; summarizing statistical data; graphical displays; the fundamentals of probability; reliability; discrete and continuous distributions; and more. This second edition includes: improved R code throughout the text, as well as new procedures, packages and interfaces; updated and additional examples, exercises and projects covering recent developments of computing; an introduction to bivariate discrete distributions together with the R functions used to handle large matrices of conditional probabilities, which are often needed in machine translation; an introduction to linear regression with particular emphasis on its application to machine learning using testing and training data; a new section on spam filtering using Bayes theorem to develop the filters; an extended range of Poisson applications such as network failures, website hits, virus attacks and accessing the cloud; use of new allocation functions in R to deal with hash table collision, server overload and the general allocation problem. The book is supplemented with a Wiley Book Companion Site featuring data and solutions to exercises within the book. Primarily addressed to students of computer science and related areas, [Probability with R: An Introduction with Computer Science Applications, Second Edition](#) is also an excellent text for students of engineering and the general sciences. Computing professionals who need to understand the relevance of probability in their areas of practice will find it useful. [SAS and R](#) Springer Science & Business R is the world's most popular language for developing statistical software: Archaeologists use it to track the spread of ancient civilizations, drug companies use it

to discover which medications are safe and effective, and actuaries use it to assess financial risks and keep economies running smoothly. The Art of R Programming takes you on a guided tour of software development with R, from basic types and data structures to advanced topics like closures, recursion, and anonymous functions. No statistical knowledge is required, and your programming skills can range from hobbyist to pro. Along the way, you'll learn about functional and object-oriented programming, running mathematical simulations, and rearranging complex data into simpler, more useful formats. You'll also learn to: -Create artful graphs to visualize complex data sets and functions -Write more efficient code using parallel R and vectorization -Interface R with C/C++ and Python for increased speed or functionality -Find new R packages for text analysis, image manipulation, and more -Squash annoying bugs with advanced debugging techniques Whether you're designing aircraft, forecasting the weather, or you just need to tame your data, [The Art of R Programming](#) is your guide to harnessing the power of statistical computing. [Mathematical Statistics with Resampling and R](#) Addison-Wesley Professional Learn how to use R to turn raw data into insight, knowledge, and understanding. This book introduces you to R, RStudio, and the tidyverse, a collection of R packages designed to work together to make data science fast, fluent, and fun. Suitable for readers with no previous programming experience, [R for Data Science](#) is designed to get you doing data science as quickly as possible. Authors Hadley Wickham and Garrett Grolemund guide you through the steps of importing, wrangling, exploring, and modeling your data and communicating the results. You'll get a complete, big-picture understanding of the data science cycle, along with basic tools you need to manage the details. Each section of the book is paired with exercises to help you practice what you've learned along the way. You'll learn how to: [Wrangle](#)—transform your datasets into a form convenient for analysis [Program](#)—learn powerful R tools for solving data problems with greater clarity and ease [Explore](#)—examine your data, generate hypotheses, and quickly test them [Model](#)—provide a low-dimensional summary that captures true "signals" in your dataset [Communicate](#)—learn R Markdown for integrating prose, code, and results [A Course in Statistics with R](#) CRC Press Conquer the complexities of this open

source statistical language R is fast becoming the de facto standard for statistical computing and analysis in science, business, engineering, and related fields. This book examines this complex language using simple statistical examples, showing how R operates in a user-friendly context. Both students and workers in fields that require extensive statistical analysis will find this book helpful as they learn to use R for simple summary statistics, hypothesis testing, creating graphs, regression, and much more. It covers formula notation, complex statistics, manipulating data and extracting components, and rudimentary programming. R, the open source statistical language increasingly used to handle statistics and produces publication-quality graphs, is notoriously complex. This book makes R easier to understand through the use of simple statistical examples, teaching the necessary elements in the context in which R is actually used. Covers getting started with R and using it for simple summary statistics, hypothesis testing, and graphs. Shows how to use R for formula notation, complex statistics, manipulating data, extracting components, and regression. Provides beginning programming instruction for those who want to write their own scripts. Beginning R offers anyone who needs to perform statistical analysis the information necessary to use R with confidence.

Analyzing Baseball Data with R, Second Edition John Wiley & Sons

An Introduction to Statistical Learning provides an accessible overview of the field of statistical learning, an essential toolset for making sense of the vast and complex data sets that have emerged in fields ranging from biology to finance to marketing to astrophysics in the past twenty years. This book presents some of the most important modeling and prediction techniques, along with relevant applications. Topics include linear regression, classification, resampling methods, shrinkage approaches, tree-based methods, support vector machines, clustering, and more. Color graphics and real-world examples are used to illustrate the methods presented. Since the goal of this textbook is to facilitate the use of these statistical learning techniques by practitioners in science, industry, and other fields, each chapter contains a tutorial on implementing the analyses and methods presented in R, an extremely popular open source statistical software platform. Two of the authors co-wrote *The Elements of Statistical Learning* (Hastie, Tibshirani and Friedman, 2nd edition

2009), a popular reference book for statistics and machine learning researchers. An Introduction to Statistical Learning covers many of the same topics, but at a level accessible to a much broader audience. This book is targeted at statisticians and non-statisticians alike who wish to use cutting-edge statistical learning techniques to analyze their data. The text assumes only a previous course in linear regression and no knowledge of matrix algebra.

with Applications in R John Wiley & Sons

The high-level language of R is recognized as one of the most powerful and flexible statistical software environments, and is rapidly becoming the standard setting for quantitative analysis, statistics and graphics. R provides free access to unrivalled coverage and cutting-edge applications, enabling the user to apply numerous statistical methods ranging from simple regression to time series or multivariate analysis. Building on the success of the author's bestselling *Statistics: An Introduction using R*, *The R Book* is packed with worked examples, providing an all inclusive guide to R, ideal for novice and more accomplished users alike. The book assumes no background in statistics or computing and introduces the advantages of the R environment, detailing its applications in a wide range of disciplines. Provides the first comprehensive reference manual for the R language, including practical guidance and full coverage of the graphics facilities. Introduces all the statistical models covered by R, beginning with simple classical tests such as chi-square and t-test. Proceeds to examine more advanced methods, from regression and analysis of variance, through to generalized linear models, generalized mixed models, time series, spatial statistics, multivariate statistics and much more. The R Book is aimed at undergraduates, postgraduates and professionals in science, engineering and medicine. It is also ideal for students and professionals in statistics, economics, geography and the social sciences.

Statistics No Starch Press

If you're like most R users, you have deep knowledge and love for statistics. But as your organization continues to collect huge amounts of data, adding tools such as Apache Spark makes a lot of sense. With this practical book, data scientists and professionals working with large-scale data applications will learn how to use Spark from R to tackle big data and big compute problems. Authors Javier Luraschi, Kevin Kuo, and Edgar Ruiz show you how to use R with Spark to solve

different data analysis problems. This book covers relevant data science topics, cluster computing, and issues that should interest even the most advanced users. Analyze, explore, transform, and visualize data in Apache Spark with R. Create statistical models to extract information and predict outcomes; automate the process in production-ready workflows. Perform analysis and modeling across many machines using distributed computing techniques. Use large-scale data from multiple sources and different formats with ease from within Spark. Learn about alternative modeling frameworks for graph processing, geospatial analysis, and genomics at scale. Dive into advanced topics including custom transformations, real-time data processing, and creating custom Spark extensions.

An Introduction using R John Wiley & Sons

Turn your R code into packages that others can easily download and use. This practical book shows you how to bundle reusable R functions, sample data, and documentation together by applying author Hadley Wickham's package development philosophy. In the process, you'll work with devtools, roxygen, and testthat, a set of R packages that automate common development tasks. Devtools encapsulates best practices that Hadley has learned from years of working with this programming language. Ideal for developers, data scientists, and programmers with various backgrounds, this book starts you with the basics and shows you how to improve your package writing over time. You'll learn to focus on what you want your package to do, rather than think about package structure. Learn about the most useful components of an R package, including vignettes and unit tests. Automate anything you can, taking advantage of the years of development experience embodied in devtools. Get tips on good style, such as organizing functions into files. Streamline your development process with devtools. Learn the best way to submit your package to the Comprehensive R Archive Network (CRAN). Learn from a well-respected member of the R community who created 30 R packages, including ggplot2, dplyr, and tidyr.

Fundamentals of Programming and Statistical Analysis Lulu.com

R is the amazing, free, open-access software package for scientific graphs and calculations used by scientists worldwide. The R Student Companion is a student-oriented manual describing how to use R in high school and college science and mathematics courses. Written for beginners in scientific computation, the

book assumes the reader has just some [Reproducible Research with R and RStudio](#) Simon and Schuster

Computer software is an essential tool for many statistical modelling and data analysis techniques, aiding in the implementation of large data sets in order to obtain useful results. R is one of the most powerful and flexible statistical software packages available, and enables the user to apply a wide variety of statistical methods ranging from simple regression to generalized linear modelling. *Statistics: An Introduction using R* is a clear and concise introductory textbook to statistical analysis using this powerful and free software, and follows on from the success of the author's previous best-selling title *Statistical Computing*. * Features step-by-step instructions that assume no mathematics, statistics or programming background, helping the non-statistician to fully understand the methodology. * Uses a series of realistic examples, developing step-wise from the simplest cases, with the emphasis on checking the assumptions (e.g. constancy of variance and normality of errors) and the adequacy of the model chosen to fit the data. * The emphasis throughout is on estimation of effect sizes and confidence intervals, rather than on hypothesis testing. * Covers the full range of statistical techniques likely to be need to analyse the data from research projects, including elementary material like t-tests and chi-squared tests, intermediate methods like regression and analysis of variance, and more advanced techniques like generalized linear modelling. * Includes numerous worked examples and exercises within each chapter. * Accompanied by a website featuring worked examples, data sets, exercises and solutions:

<http://www.imperial.ac.uk/bio/research/crawley/statistics> *Statistics: An Introduction using R* is the first text to offer such a concise introduction to a broad array of statistical methods, at a level that is elementary enough to appeal to a broad range of disciplines. It is primarily aimed at undergraduate students in medicine, engineering, economics and biology - but will also appeal to postgraduates who have not previously covered this area, or wish to switch to using R.

R for Data Science No Starch Press
This thoroughly updated second edition combines the latest software applications with the benefits of modern resampling techniques Resampling helps students understand the meaning of sampling distributions, sampling variability, P-values, hypothesis tests, and confidence

intervals. The second edition of *Mathematical Statistics with Resampling and R* combines modern resampling techniques and mathematical statistics. This book has been classroom-tested to ensure an accessible presentation, uses the powerful and flexible computer language R for data analysis and explores the benefits of modern resampling techniques. This book offers an introduction to permutation tests and bootstrap methods that can serve to motivate classical inference methods. The book strikes a balance between theory, computing, and applications, and the new edition explores additional topics including consulting, paired t test, ANOVA and Google Interview Questions. Throughout the book, new and updated case studies are included representing a diverse range of subjects such as flight delays, birth weights of babies, and telephone company repair times. These illustrate the relevance of the real-world applications of the material. This new edition: • Puts the focus on statistical consulting that emphasizes giving a client an understanding of data and goes beyond typical expectations • Presents new material on topics such as the paired t test, Fisher's Exact Test and the EM algorithm • Offers a new section on "Google Interview Questions" that illustrates statistical thinking • Provides a new chapter on ANOVA • Contains more exercises and updated case studies, data sets, and R code Written for undergraduate students in a mathematical statistics course as well as practitioners and researchers, the second edition of *Mathematical Statistics with Resampling and R* presents a revised and updated guide for applying the most current resampling techniques to mathematical statistics.

[Data Management, Statistical Analysis, and Graphics, Second Edition](#) CRC Press
BRIDGES THE GAP BETWEEN SAS AND R, ALLOWING USERS TRAINED IN ONE LANGUAGE TO EASILY LEARN THE OTHER SAS and R are widely-used, very different software environments. Prized for its statistical and graphical tools, R is an open-source programming language that is popular with statisticians and data miners who develop statistical software and analyze data. SAS (Statistical Analysis System) is the leading corporate software in analytics thanks to its faster data handling and smaller learning curve. SAS for R Users enables entry-level data scientists to take advantage of the best aspects of both tools by providing a cross-functional framework for users who already know R but may need to work with SAS. Those with knowledge of both R and

SAS are of far greater value to employers, particularly in corporate settings. Using a clear, step-by-step approach, this book presents an analytics workflow that mirrors that of the everyday data scientist. This up-to-date guide is compatible with the latest R packages as well as SAS University Edition. Useful for anyone seeking employment in data science, this book: Instructs both practitioners and students fluent in one language seeking to learn the other Provides command-by-command translations of R to SAS and SAS to R Offers examples and applications in both R and SAS Presents step-by-step guidance on workflows, color illustrations, sample code, chapter quizzes, and more Includes sections on advanced methods and applications Designed for professionals, researchers, and students, SAS for R Users is a valuable resource for those with some knowledge of coding and basic statistics who wish to enter the realm of data science and business analytics. AJAY OHRI is the founder of analytics startup Decisionstats.com. His research interests include spreading open source analytics, analyzing social media manipulation with mechanism design, simpler interfaces to cloud computing, investigating climate change, and knowledge flows. He currently advises startups in analytics off shoring, analytics services, and analytics. He is the author of *Python for R Users: A Data Science Approach* (Wiley), *R for Business Analytics*, and *R for Cloud Computing*.

Statistics and Data with R "O'Reilly Media, Inc."

Forecasting is required in many situations. Stocking an inventory may require forecasts of demand months in advance. Telecommunication routing requires traffic forecasts a few minutes ahead. Whatever the circumstances or time horizons involved, forecasting is an important aid in effective and efficient planning. This textbook provides a comprehensive introduction to forecasting methods and presents enough information about each method for readers to use them sensibly. *The R Book* "O'Reilly Media, Inc." Up-to-Date Guidance from One of the Foremost Members of the R Core Team Written by John M. Chambers, the leading developer of the original S software, *Extending R* covers key concepts and techniques in R to support analysis and research projects. It presents the core ideas of R, provides programming guidance for projects of all scales, and introduces new, valuable techniques that extend R. The book first describes the fundamental characteristics and background of R, giving readers a

foundation for the remainder of the text. It next discusses topics relevant to programming with R, including the apparatus that supports extensions. The book then extends R's data structures through object-oriented programming, which is the key technique for coping with complexity. The book also incorporates a new structure for interfaces applicable to a variety of languages. A reflection of what R is today, this guide explains how to design and organize extensions to R by correctly using objects, functions, and interfaces. It enables current and future users to add their own contributions and packages to R. A 2017 Choice Outstanding Academic Title

[A Bayesian Course with Examples in R and Stan](#) CRC Press

This invaluable addition to any data scientist's library shows you how to apply the R programming language and useful statistical techniques to everyday business situations as well as how to effectively present results to audiences of all levels. To answer the ever-increasing demand for machine learning and analysis, this new edition boasts additional R tools, modeling techniques, and more. Practical Data Science with R, Second Edition takes a

practice-oriented approach to explaining basic principles in the ever-expanding field of data science. You'll jump right to real-world use cases as you apply the R programming language and statistical analysis techniques to carefully explained examples based in marketing, business intelligence, and decision support.

Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

[Proven Recipes for Data Analysis, Statistics, and Graphics](#) "O'Reilly Media, Inc."

The contents of The R Software are presented so as to be both comprehensive and easy for the reader to use. Besides its application as a self-learning text, this book can support lectures on R at any level from beginner to advanced. This book can serve as a textbook on R for beginners as well as more advanced users, working on Windows, MacOS or Linux OSes. The first part of the book deals with the heart of the R language and its fundamental concepts, including data organization, import and export, various manipulations, documentation, plots, programming and maintenance. The last

chapter in this part deals with oriented object programming as well as interfacing R with C/C++ or Fortran, and contains a section on debugging techniques. This is followed by the second part of the book, which provides detailed explanations on how to perform many standard statistical analyses, mainly in the Biostatistics field. Topics from mathematical and statistical settings that are included are matrix operations, integration, optimization, descriptive statistics, simulations, confidence intervals and hypothesis testing, simple and multiple linear regression, and analysis of variance. Each statistical chapter in the second part relies on one or more real biomedical data sets, kindly made available by the Bordeaux School of Public Health (Institut de Santé Publique, d'Épidémiologie et de Développement - ISPED) and described at the beginning of the book. Each chapter ends with an assessment section: memorandum of most important terms, followed by a section of theoretical exercises (to be done on paper), which can be used as questions for a test. Moreover, worksheets enable the reader to check his new abilities in R. Solutions to all exercises and worksheets are included in this book.

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