Learn Ggplot2 Using Shiny App

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An R Companion for Applied Statistics I Danney Rasco 2020-01-28 An R Companion for Applied Statistics I: Basic Bivariate Techniques breaks the language of the R software down into manageable chunks in order to help students learn how to use it. R is a powerful, flexible, and free tool. However, the flexibility—which eventually becomes a great asset—can make the initial learning curve appear steep. This book introduces a few key aspects of the R tool. As readers become comfortable with these aspects, they develop a foundation from which to more thoroughly explore R and the packages available for it. This introduction does not explain every possible way to analyze data or perform a specific type of analysis. Rather, it focuses on the analyses that are traditionally included in an undergraduate statistics course and provides one or two ways to run these analyses in R. Datasets and scripts to run the examples are provided on an accompanying website. The book has been designed to be an R companion to Warner⎕s Applied Statistics I, Third Edition, and includes end-of-chapter instructions for replicating the examples from that book in R. However, this text can also be used as a stand-alone R guide, without reference to the Warner text.

Practical R for Mass Communication and Journalism Sharon Machlis 2018-12-21 Do you want to use R to tell stories? This book was written for you—whether you already know some R or have never coded before. Most R texts focus only on programming or statistical theory. Practical R for Mass Communication and Journalism gives you ideas, tools, and techniques for incorporating data and visualizations into your narratives. You'll see step by step how to: Analyze airport flight delays, restaurant inspections, and election results Map bank locations, median incomes, and new voting districts Compare campaign contributions to final election results Extract data from PDFs Whip messy data into shape for analysis Scrape data from a website Create graphics ranging from simple, static charts to interactive visualizations for the Web If you work or plan to work in a newsroom, government office, non-profit policy organization, or PR office, Practical R for Mass Communication and Journalism will help you use R in your world. This book has a companion website with code, links to additional resources, and searchable tables by function and task. Sharon Machlis is the author of Computerworld's Beginner's Guide to R, host of InfoWorld's Do More With R video screencast series, admin for the R for Journalists Google Group, and is well known among Twitter users who follow the #rstats hashtag. She is Director of Editorial Data and Analytics at IDG Communications (parent company of Computerworld, InfoWorld, PC World and Macworld, among others) and a frequent speaker at data journalism and R conferences.

Engineering Production-Grade Shiny Apps Colin Fay 2021-09-27 From the Reviews "[This book] contains an excellent blend of both Shiny-specific topics ... and practical advice from software development that fits in nicely with Shiny apps. You will find many nuggets of wisdom sprinkled throughout these chapters...." Eric Nantz, Host of the R-Podcast and the Shiny Developer Series (from the Foreword) "[This] book is a gradual and pleasant invitation to the production-ready shiny apps world. It ...exposes a comprehensive and robust workflow powered by the {golem} package. [It] fills the not yet covered gap between shiny app development and deployment in such a thrilling way that it may be read in one sitting.... In the industry world, where processes robustness is a key toward productivity, this book will indubitably have a tremendous impact." David Granjon, Sr. Expert Data Science, Novartis Presented in full color, Engineering Production-Grade Shiny Apps helps people build production-grade shiny applications, by providing advice, tools, and a methodology to work on web applications with R. This book starts with an overview of the challenges which arise from any big web application project: organizing work, thinking about the user interface, the challenges of teamwork and the production environment. Then, it moves to a step-by-step methodology that goes from the idea to the end application. Each part of this process will cover in detail a series of tools and methods to use while building production-ready shiny applications. Finally, the book will end with a series of approaches and advice about optimizations for production. Features Focused on practical matters: This book does not cover Shiny concepts, but practical tools and methodologies to use for production. Based on experience: This book is a

formalization of several years of experience building Shiny applications. Original content: This book presents new methodologies and tooling, not just a review of what already exists. Engineering Production-Grade Shiny Apps covers medium to advanced content about Shiny, so it will help people that are already familiar with building apps with Shiny, and who want to go one step further.

Mastering Spark with R Javier Luraschi 2019-10-07 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

R for Data Science Hadley Wickham 2016-12-12 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

Getting Started with Mike Dewar 2012 Learn how to create beautiful, interactive, browser-based data visualizations with the D3 JavaScript library. This hands-on book shows you how to use a combination of JavaScript and SVG to build everything from simple bar charts to complex infographics. You'll learn how to use basic D3 tools by building visualizations based on real data from the New York Metropolitan Transit Authority. Using historical tables, geographical information, and other data, you'll graph bus breakdowns and accidents and the percentage of subway trains running on time, among other examples. By the end of the book, you'll be prepared to build your own web-based data visualizations with D3. Join a dataset with elements of a webpage, and modify the elements based on the data Map data values onto pixels and colors with D3's scale objects Apply axis and line generators to simplify aspects of building visualizations Create a simple UI that allows users to investigate and compare data Use D3 transitions in your UI to animate important aspects of the data Get an introduction to D3 layout tools for building more sophisticated visualizations If you can code and manipulate data, and know how to work with JavaScript and SVG, this book is for you.

Mastering Shiny Hadley Wickham 2021-04-13 Master the Shiny web framework--and take your R skills to a whole new level. Shiny helps you create fully interactive web apps for data analyses by letting you move beyond static reports, tables, and graphs. Your users will be able to jump between datasets, explore different subsets, run models with parameter values of their choosing, customize visualizations, and much more. Hadley Wickham from RStudio shows data scientists, data analysts, statisticians, and scientific researchers with no knowledge of HTML, CSS, or JavaScript how to create complex Shiny apps. Shiny is easy to learn, but even intermediate users often wonder what they've missed. This in-depth introduction provides a learning path that you can follow with confidence. Getting started: Begin with a tutorial-style exploration of the basics Shiny in action: Explore Shiny functionality with a focus on code samples and example apps Best practices: Learn techniques for managing complexity and ensuring correctness, and explore ways to measure and improve your Shiny app's scalability Mastering reactivity: Learn the underlying theory of reactivity to improve your ability to reason about complex Shiny apps

Mastering RStudio – Develop, Communicate, and Collaborate with R Julian Hillebrand 2015-12-04 Harness the power of RStudio to create web applications, R packages, markdown reports and pretty data visualizations About This Book Discover the multi-functional use of RStudio to support your daily work with R code Learn to create stunning, meaningful, and interactive graphs and learn to embed them into easy communicable reports using multiple R packages Develop your own R packages and Shiny web apps to share your knowledge and collaborate with others. Who This Book Is For This book is aimed at R developers and analysts who wish to do R statistical development while taking advantage of RStudio's functionality to ease their development efforts. R programming experience is assumed as well as being comfortable with R's

basic structures and a number of functions. What You Will Learn Discover the RStudio IDE and details about the user interface Communicate your insights with R Markdown in static and interactive ways Learn how to use different graphic systems to visualize your data Build interactive web applications with the Shiny framework to present and share your results Understand the process of package development and assemble your own R packages Easily collaborate with other people on your projects by using Git and GitHub Manage the R environment for your organization with RStudio and Shiny server Apply your obtained knowledge about RStudio and R development to create a real-world dashboard solution In Detail RStudio helps you to manage small to large projects by giving you a multi-functional integrated development environment, combined with the power and flexibility of the R programming language, which is becoming the bridge language of data science for developers and analyst worldwide. Mastering the use of RStudio will help you to solve real-world data problems. This book begins by guiding you through the installation of RStudio and explaining the user interface step by step. From there, the next logical step is to use this knowledge to improve your data analysis workflow. We will do this by building up our toolbox to create interactive reports and graphs or even web applications with Shiny. To collaborate with others, we will explore how to use Git and GitHub with RStudio and how to build your own packages to ensure top quality results. Finally, we put it all together in an interactive dashboard written with R. Style and approach An easy-to-follow guide full of hands-on examples to master RStudio. Beginning from explaining the basics, each topic is explained with a lot of details for every feature.

Learning R for Geospatial Analysis Michael Dorman 2014-12-26 This book is intended for anyone who wants to learn how to efficiently analyze geospatial data with R, including GIS analysts, researchers, educators, and students who work with spatial data and who are interested in expanding their capabilities through programming. The book assumes familiarity with the basic geographic information concepts (such as spatial coordinates), but no prior experience with R and/or programming is required. By focusing on R exclusively, you will not need to depend on any external software—a working installation of R is all that is necessary to begin.

Geocomputation with R Robin Lovelace 2019-03-22 Geocomputation with R is for people who want to analyze, visualize and model geographic data with open source software. It is based on R, a statistical programming language that has powerful data processing, visualization, and geospatial capabilities. The book equips you with the knowledge and skills to tackle a wide range of issues manifested in geographic data, including those with scientific, societal, and environmental implications. This book will interest people from many backgrounds, especially Geographic Information Systems (GIS) users interested in applying their domain-specific knowledge in a powerful open source language for data science, and R users interested in extending their skills to handle spatial data. The book is divided into three parts: (I) Foundations, aimed at getting you up-to-speed with geographic data in R, (II) extensions, which covers advanced techniques, and (III) applications to real-world problems. The chapters cover progressively more advanced topics, with early chapters providing strong foundations on which the later chapters build. Part I describes the nature of spatial datasets in R and methods for manipulating them. It also covers geographic data import/export and transforming coordinate reference systems. Part II represents methods that build on these foundations. It covers advanced map making (including web mapping), "bridges" to GIS, sharing reproducible code, and how to do cross-validation in the presence of spatial autocorrelation. Part III applies the knowledge gained to tackle real-world problems, including representing and modeling transport systems, finding optimal locations for stores or services, and ecological modeling. Exercises at the end of each chapter give you the skills needed to tackle a range of geospatial problems. Solutions for each chapter and supplementary materials providing extended examples are available at https://geocompr.github.io/geocompkg/articles/. Dr. Robin Lovelace is a University Academic Fellow at the University of Leeds, where he has taught R for geographic research over many years, with a focus on transport systems. Dr. Jakub Nowosad is an Assistant Professor in the Department of Geoinformation at the Adam Mickiewicz University in Poznan, where his focus is on the analysis of large datasets to understand environmental processes. Dr. Jannes Muenchow is a Postdoctoral Researcher in the GIScience Department at the University of Jena, where he develops and teaches a range of geographic methods, with a focus on ecological modeling, statistical geocomputing, and predictive mapping. All three are active developers and work on a number of R packages, including stplanr, sabre, and RQGIS.

Digitizing Production Systems Numan M. Durakbasa 2021-11-10 This book contains selected papers from International Symposium for Production Research 2021, held on October 7–9, 2021, online, Turkey. The book reports recent advances in production engineering and operations. It explores topics including production research; production management; operations management; industry 4.0; industrial engineering; mechanical engineering; engineering management; and operational research. Presenting real-life applications, case studies, and mathematical models, this book is of interest to researchers, academics, and practitioners in the field of production and operation engineering. It provides both the results of recent research and practical solutions to real-world problems.

An Introduction to Data Science Jeffrey S. Saltz 2017-08-25 An Introduction to Data Science by Jeffrey S. Saltz and Jeffrey M. Stanton is an easy-to-read, gentle introduction for people with a wide range of

backgrounds into the world of data science. Needing no prior coding experience or a deep understanding of statistics, this book uses the R programming language and RStudio® platform to make data science welcoming and accessible for all learners. After introducing the basics of data science, the book builds on each previous concept to explain R programming from the ground up. Readers will learn essential skills in data science through demonstrations of how to use data to construct models, predict outcomes, and visualize data.

Learn Emotion Analysis with R Partha Majumdar 2021-06-02 Learn to assess textual data and extract sentiments using various text analysis R packages KEY FEATURES ⬜ In-depth coverage on core principles, challenges, and application of Emotion Analysis. ⬜ Includes real-world examples to simplify practical uses of R, Shiny, and various popular NLP techniques. ⬜ Covers different strategies used in Sentiment and Emotion Analysis. DESCRIPTION This book covers how to conduct Emotion Analysis based on Lexicons. Through a detailed code walkthrough, the book will explain how to develop systems for Sentiment and Emotion Analysis from popular sources of data, including WhatsApp, Twitter, etc. The book starts with a discussion on R programming and Shiny programming as these will lay the foundation for the system to be developed for Emotion Analysis. Then, the book discusses essentials of Sentiment Analysis and Emotion Analysis. The book then proceeds to build Shiny applications for Emotion Analysis. The book rounds off with creating a tool for Emotion Analysis from the data obtained from Twitter and WhatsApp. Emotion Analysis can be also performed using Machine Learning. However, this requires labeled data. This is a logical next step after reading this book. WHAT YOU WILL LEARN ⬜ Learn the essentials of Sentiment Analysis. ⬜ Learn the essentials of Emotion Analysis. ⬜ Conducting Emotion Analysis using Lexicons. ⬜ Learn to develop Shiny applications. ⬜ Understanding the essentials of R programming for developing systems for Emotion Analysis. WHO THIS BOOK IS FOR This book aspires to teach NLP users, ML engineers, and AI engineers who want to develop a strong understanding of Emotion and Sentiment Analysis. No prior knowledge of R programming is needed. All you need is just an open mind to learn and explore this concept. TABLE OF CONTENTS Section 1 Introduction to R Programming 1 Getting Started with R 2 Simple Operations using R 3 Developing Simple Applications in R Section 2 Introduction to Shiny Programming 4 Structure of Shiny Applications 5 Shiny Application 1 6 Shiny Application 2 Section 3 Emotion Analysis 7 Sentiment Analysis 8 Emotion Analysis 9 ZEUSg Section 4 Twitter Data Analysis 10 Introduction to Twitter Data Analysis 11 Emotion Analysis on Twitter Data 12 Chidiya BONUS CHAPTER WhatsApp Chat Analysis

The Big R-Book Philippe J. S. De Brouwer 2020-09-29 Introduces professionals and scientists to statistics and machine learning using the programming language R Written by and for practitioners, this book provides an overall introduction to R, focusing on tools and methods commonly used in data science, and placing emphasis on practice and business use. It covers a wide range of topics in a single volume, including big data, databases, statistical machine learning, data wrangling, data visualization, and the reporting of results. The topics covered are all important for someone with a science/math background that is looking to quickly learn several practical technologies to enter or transition to the growing field of data science. The Big R-Book for Professionals: From Data Science to Learning Machines and Reporting with R includes nine parts, starting with an introduction to the subject and followed by an overview of R and elements of statistics. The third part revolves around data, while the fourth focuses on data wrangling. Part 5 teaches readers about exploring data. In Part 6 we learn to build models, Part 7 introduces the reader to the reality in companies, Part 8 covers reports and interactive applications and finally Part 9 introduces the reader to big data and performance computing. It also includes some helpful appendices. Provides a practical guide for non-experts with a focus on business users Contains a unique combination of topics including an introduction to R, machine learning, mathematical models, data wrangling, and reporting Uses a practical tone and integrates multiple topics in a coherent framework Demystifies the hype around machine learning and AI by enabling readers to understand the provided models and program them in R Shows readers how to visualize results in static and interactive reports Supplementary materials includes PDF slides based on the book's content, as well as all the extracted R-code and is available to everyone on a Wiley Book Companion Site The Big R-Book is an excellent guide for science technology, engineering, or mathematics students who wish to make a successful transition from the academic world to the professional. It will also appeal to all young data scientists, quantitative analysts, and analytics professionals, as well as those who make mathematical models.

Introduction to R for Business Intelligence Jay Gendron 2016-08-26 Learn how to leverage the power of R for Business Intelligence About This Book Use this easy-to-follow guide to leverage the power of R analytics and make your business data more insightful. This highly practical guide teaches you how to develop dashboards that help you make informed decisions using R. Learn the A to Z of working with data for Business Intelligence with the help of this comprehensive guide. Who This Book Is For This book is for data analysts, business analysts, data science professionals or anyone who wants to learn analytic approaches to business problems. Basic familiarity with R is expected. What You Will Learn Extract, clean, and transform data Validate the quality of the data and variables in datasets Learn exploratory data analysis Build regression models Implement popular data-mining algorithms Visualize results using popular graphs Publish the results as a dashboard through Interactive Web Application frameworks In Detail Explore the world of Business Intelligence through the eyes of an analyst working in a successful and growing company. Learn R through

use cases supporting different functions within that company. This book provides data-driven and analytically focused approaches to help you answer questions in operations, marketing, and finance. In Part 1, you will learn about extracting data from different sources, cleaning that data, and exploring its structure. In Part 2, you will explore predictive models and cluster analysis for Business Intelligence and analyze financial times series. Finally, in Part 3, you will learn to communicate results with sharp visualizations and interactive, web-based dashboards. After completing the use cases, you will be able to work with business data in the R programming environment and realize how data science helps make informed decisions and develops business strategy. Along the way, you will find helpful tips about R and Business Intelligence. Style and approach This book will take a step-by-step approach and instruct you in how you can achieve Business Intelligence from scratch using R. We will start with extracting data and then move towards exploring, analyzing, and visualizing it. Eventually, you will learn how to create insightful dashboards that help you make informed decisions—and all of this with the help of real-life examples.

Web Application Development with R Using Shiny Chris Beeley 2016-01-29 Integrate the power of R with the simplicity of Shiny to deliver cutting-edge analytics over the Web About This Book Use Shiny's built-in functions to produce engaging user interfaces, and integrate them into your own web pages Implement powerful user-contributed packages to access graphics from the web, make your own dashboards, use interactive maps, and more Extend Shiny using JavaScript and jQuery with minimal coding using this handy, step-by-step guide Who This Book Is For This book is for anybody who wants to produce interactive data summaries over the web, whether you want to share them with a few colleagues or the whole world. No previous experience with R, Shiny, HTML, or CSS is required to begin using this book, although you should possess some previous experience with programming in a different language. What You Will Learn Build interactive applications using Shiny's built-in widgets Use the built-in layout functions in Shiny to produce user-friendly applications Integrate Shiny applications with web pages and customize them using HTML and CSS Harness the power of JavaScript and jQuery to customize your applications Engage your users and build better analytics using interactive plots Debug your applications using Shiny's built-in functions Deliver simple and powerful analytics across your organization using Shiny dashboards Share your applications with colleagues or over the Internet using cloud services or your own server In Detail R is a highly flexible and powerful tool for analyzing and visualizing data. Most of the applications built using various libraries with R are desktop-based. But what if you want to go on the web? Here comes Shiny to your rescue! Shiny allows you to create interactive web applications using the excellent analytical and graphical capabilities of R. This book will guide you through basic data management and analysis with R through your first Shiny application, and

then show you how to integrate Shiny applications with your own web pages. Finally, you will learn how to finely control the inputs and outputs of your application, along with using other packages to build state-of-the-art applications, including dashboards. Style and approach Learn by doing! Each chapter includes code and examples to use and adapt for your own applications. As the chapters progress, the code and examples are built upon until you have all the materials required to build a large, complex, real-world analytics application.

Reproducible Finance with R Jonathan K. Regenstein, Jr. 2018-09-24 Reproducible Finance with R: Code Flows and Shiny Apps for Portfolio Analysis is a unique introduction to data science for investment management that explores the three major R/finance coding paradigms, emphasizes data visualization, and explains how to build a cohesive suite of functioning Shiny applications. The full source code, asset price data and live Shiny applications are available at reproduciblefinance.com. The ideal reader works in finance or wants to work in finance and has a desire to learn R code and Shiny through simple, yet practical real-world examples. The book begins with the first step in data science: importing and wrangling data, which in the investment context means importing asset prices, converting to returns, and constructing a portfolio. The next section covers risk and tackles descriptive statistics such as standard deviation, skewness, kurtosis, and their rolling histories. The third section focuses on portfolio theory, analyzing the Sharpe Ratio, CAPM, and Fama French models. The book concludes with applications for finding individual asset contribution to risk and for running Monte Carlo simulations. For each of these tasks, the three major coding paradigms are explored and the work is wrapped into interactive Shiny dashboards.

Mastering Shiny Hadley Wickham 2021-04-29 Master the Shiny web framework—and take your R skills to a whole new level. By letting you move beyond static reports, Shiny helps you create fully interactive web apps for data analyses. Users will be able to jump between datasets, explore different subsets or facets of the data, run models with parameter values of their choosing, customize visualizations, and much more. Hadley Wickham from RStudio shows data scientists, data analysts, statisticians, and scientific researchers with no knowledge of HTML, CSS, or JavaScript how to create rich web apps from R. This in-depth guide provides a learning path that you can follow with confidence, as you go from a Shiny beginner to an expert developer who can write large, complex apps that are maintainable and performant. Get started: Discover how the major pieces of a Shiny app fit together Put Shiny in action: Explore Shiny functionality with a focus on code samples, example apps, and useful techniques Master reactivity: Go deep into the theory and practice of reactive programming and examine reactive graph components Apply best practices: Examine useful techniques for making your Shiny apps work well in production

Modern Statistics for Modern Biology Susan Holmes 2018-11-30 A far-reaching course in practical advanced

statistics for biologists using R/Bioconductor, data exploration, and simulation.

Doing Data Science in R Mark Andrews 2021-03-31 This approachable introduction to doing data science in R provides step-by-step advice on using the tools and statistical methods to carry out data analysis. Introducing the fundamentals of data science and R before moving into more advanced topics like Multilevel Models and Probabilistic Modelling with Stan, it builds knowledge and skills gradually. This book: Focuses on providing practical guidance for all aspects, helping readers get to grips with the tools, software, and statistical methods needed to provide the right type and level of analysis their data requires Explores the foundations of data science and breaks down the processes involved, focusing on the link between data science and practical social science skills Introduces R at the outset and includes extensive worked examples and R code every step of the way, ensuring students see the value of R and its connection to methods while providing hands-on practice in the software Provides examples and datasets from different disciplines and locations demonstrate the widespread relevance, possible applications, and impact of data science across the social sciences.

R Graphics Cookbook Winston Chang 2013 "Practical recipes for visualizing data"--Cover.

Interactive Web–Based Data Visualization with R, plotly, and shiny Carson Sievert 2020-01-28 The richly illustrated Interactive Web-Based Data Visualization with R, plotly, and shiny focuses on the process of programming interactive web graphics for multidimensional data analysis. It is written for the data analyst who wants to leverage the capabilities of interactive web graphics without having to learn web programming. Through many R code examples, you will learn how to tap the extensive functionality of these tools to enhance the presentation and exploration of data. By mastering these concepts and tools, you will impress your colleagues with your ability to quickly generate more informative, engaging, and reproducible interactive graphics using free and open source software that you can share over email, export to pdf, and more. Key Features: Convert static ggplot2 graphics to an interactive web-based form Link, animate, and arrange multiple plots in standalone HTML from R Embed, modify, and respond to plotly graphics in a shiny app Learn best practices for visualizing continuous, discrete, and multivariate data Learn numerous ways to visualize geo-spatial data This book makes heavy use of plotly for graphical rendering, but you will also learn about other R packages that support different phases of a data science workflow, such as tidyr, dplyr, and tidyverse. Along the way, you will gain insight into best practices for visualization of high-dimensional data, statistical graphics, and graphical perception. The printed book is complemented by an interactive website where readers can view movies demonstrating the examples and interact with graphics.

Learning R Programming Kun Ren 2016-10-28 Become an efficient data scientist with R About This Book Explore the R language from basic types and data structures to advanced topics Learn how to tackle programming problems and explore both functional and object-oriented programming techniques Learn how to address the core problems of programming in R and leverage the most popular packages for common tasks Who This Book Is For This is the perfect tutorial for anyone who is new to statistical programming and modeling. Anyone with basic programming and data processing skills can pick this book up to systematically learn the R programming language and crucial techniques. What You Will Learn Explore the basic functions in R and familiarize yourself with common data structures Work with data in R using basic functions of statistics, data mining, data visualization, root solving, and optimization Get acquainted with R's evaluation model with environments and meta-programming techniques with symbol, call, formula, and expression Get to grips with object-oriented programming in R: including the S3, S4, RC, and R6 systems Access relational databases such as SQLite and non-relational databases such as MongoDB and Redis Get to know high performance computing techniques such as parallel computing and Rcpp Use web scraping techniques to extract information Create RMarkdown, an interactive app with Shiny, DiagramR, interactive charts, ggvis, and more In Detail R is a high-level functional language and one of the must-know tools for data science and statistics. Powerful but complex, R can be challenging for beginners and those unfamiliar with its unique behaviors. Learning R Programming is the solution - an easy and practical way to learn R and develop a broad and consistent understanding of the language. Through hands-on examples you'll discover powerful R tools, and R best practices that will give you a deeper understanding of working with data. You'll get to grips with R's data structures and data processing techniques, as well as the most popular R packages to boost your productivity from the offset. Start with the basics of R, then dive deep into the programming techniques and paradigms to make your R code excel. Advance quickly to a deeper understanding of R's behavior as you learn common tasks including data analysis, databases, web scraping, high performance computing, and writing documents. By the end of the book, you'll be a confident R programmer adept at solving problems with the right techniques. Style and approach Developed to make learning easy and intuitive, this book comes packed with a wide variety of statistical and graphical techniques and a wealth of practical information for anyone looking to get started with this exciting and powerful language.

Spatial Cognition XII Jurģis Šķilters 2020-08-25 This book constitutes the thoroughly refereed proceedings of the 12th International Conference, Spatial Cognition 2020, held in Riga, Latvia, in September 2020. The physical event was postponed to 2021 due to the COVID-19 pandemic. The 19 full papers and 6 short papers presented in this book were carefully selected and reviewed from 50 submissions. They focus on the following topics: spatial representation and cognitive maps; navigation and wayfinding; spatial representation in language, logic, and narrative; and spatial abilities and learning.

ggplot2 Hadley Wickham 2009-10-03 Provides both rich theory and powerful applications Figures are accompanied by code required to produce them Full color figures

R for Everyone Jared P. Lander 2017-06-13 Statistical Computation for Programmers, Scientists, Quants, Excel Users, and Other Professionals Using the open source R language, you can build powerful statistical models to answer many of your most challenging questions. R has traditionally been difficult for non-statisticians to learn, and most R books assume far too much knowledge to be of help. R for Everyone, Second Edition, is the solution. Drawing on his unsurpassed experience teaching new users, professional data scientist Jared P. Lander has written the perfect tutorial for anyone new to statistical programming and modeling. Organized to make learning easy and intuitive, this guide focuses on the 20 percent of R functionality you'll need to accomplish 80 percent of modern data tasks. Lander's self-contained chapters start with the absolute basics, offering extensive hands-on practice and sample code. You'll download and install R; navigate and use the R environment; master basic program control, data import, manipulation, and visualization; and walk through several essential tests. Then, building on this foundation, you'll construct several complete models, both linear and nonlinear, and use some data mining techniques. After all this you'll make your code reproducible with LaTeX, RMarkdown, and Shiny. By the time you're done, you won't just know how to write R programs, you'll be ready to tackle the statistical problems you care about most. Coverage includes Explore R, RStudio, and R packages Use R for math: variable types, vectors, calling functions, and more Exploit data structures, including data.frames, matrices, and lists Read many different types of data Create attractive, intuitive statistical graphics Write user-defined functions Control program flow with if, ifelse, and complex checks Improve program efficiency with group manipulations Combine and reshape multiple datasets Manipulate strings using R's facilities and regular expressions Create normal, binomial, and Poisson probability distributions Build linear, generalized linear, and nonlinear models Program basic statistics: mean, standard deviation, and t-tests Train machine learning models Assess the quality of models and variable selection Prevent overfitting and perform variable selection, using the Elastic Net and Bayesian methods Analyze univariate and multivariate time series data Group data via K-means and hierarchical clustering Prepare reports, slideshows, and web pages with knitr Display interactive data with RMarkdown and htmlwidgets Implement dashboards with Shiny Build reusable R packages with devtools and Rcpp Register your product at informit.com/register for convenient access to downloads, updates, and corrections as they become available.

R Data Visualization Recipes Vitor Bianchi Lanzetta 2017-11-22 Translate your data into info-graphics using popular packages in R About This Book Use R's popular packages—such as ggplot2, ggvis, ggforce, and more—to create custom, interactive visualization solutions. Create, design, and build interactive dashboards using Shiny A highly practical guide to help you get to grips with the basics of data visualization techniques, and how you can implement them using R Who This Book Is For If you are looking to create custom data visualization solutions using the R programming language and are stuck somewhere in the process, this book will come to your rescue. Prior exposure to packages such as ggplot2 would be useful but not necessary. However, some R programming knowledge is required. What You Will Learn Get to know various data visualization libraries available in R to represent data Generate elegant codes to craft graphics using ggplot2, ggvis and plotly Add elements, text, animation, and colors to your plot to make sense of data Deepen your knowledge by adding bar-charts, scatterplots, and time series plots using ggplot2 Build interactive dashboards using Shiny. Color specific map regions based on the values of a variable in your data frame Create high-quality journal-publishable scatterplots Create and design various three-dimensional and multivariate plots In Detail R is an open source language for data analysis and graphics that allows users to load various packages for effective and better data interpretation. Its popularity has soared in recent years because of its powerful capabilities when it comes to turning different kinds of data into intuitive visualization solutions. This book is an update to our earlier R data visualization cookbook with 100 percent fresh content and covering all the cutting edge R data visualization tools. This book is packed with practical recipes, designed to provide you with all the guidance needed to get to grips with data visualization using R. It starts off with the basics of ggplot2, ggvis, and plotly visualization packages, along with an introduction to creating maps and customizing them, before progressively taking you through various ggplot2 extensions, such as ggforce, ggrepel, and gganimate. Using real-world datasets, you will analyze and visualize your data as histograms, bar graphs, and scatterplots, and customize your plots with various themes and coloring options. The book also covers advanced visualization aspects such as creating interactive dashboards using Shiny By the end of the book, you will be equipped with key techniques to create impressive data visualizations with professional efficiency and precision. Style and approach This book is packed with practical recipes, designed to provide you with all the guidance needed to get to grips with data visualization with R. You will learn to leverage the power of R and ggplot2 to create highly customizable data visualizations of varying complexities. The readers will then learn how to create, design, and build interactive dashboards using Shiny.

Learn ggplot2 Using Shiny App Keon-Woong Moon 2017-04-13 This book and app is for practitioners, professionals, researchers, and students who want to learn how to make a plot within the R environment using ggplot2, step-by-step without coding. In widespread use in the statistical communities, R is a free software language and environment for statistical programming and graphics. Many users find R to have a

steep learning curve but to be extremely useful once overcome. ggplot2 is an extremely popular package tailored for producing graphics within R but which requires coding and has a steep learning curve itself, and Shiny is an open source R package that provides a web framework for building web applications using R without requiring HTML, CSS, or JavaScript. This manual—"integrating" R, ggplot2, and Shiny—introduces a new Shiny app, Learn ggplot2, that allows users to make plots easily without coding. With the Learn ggplot2 Shiny app, users can make plots using ggplot2 without having to code each step, reducing typos and error messages and allowing users to become familiar with ggplot2 code. The app makes it easy to apply themes, make multiplots (combining several plots into one plot), and download plots as PNG, PDF, or PowerPoint files with editable vector graphics. Users can also make plots on any computer or smart phone. Learn ggplot2 Using Shiny App allows users to Make publication-ready plots in minutes without coding Download plots with desired width, height, and resolution Plot and download plots in png, pdf, and PowerPoint formats, with or without R code and with editable vector graphics

Hands-On Dashboard Development with Shiny Chris Beeley 2018-08-31 Progressively explore UI development with Shiny via practical examples Key Features Write a Shiny interface in pure HTML Explore powerful layout functions to make attractive dashboards and other intuitive interfaces Get to grips with Bootstrap and leverage it in your Shiny applications Book Description Although vanilla Shiny applications look attractive with some layout flexibility, you may still want to have more control over how the interface is laid out to produce a dashboard. Hands-On Dashboard Development with Shiny helps you incorporate this in your applications. The book starts by guiding you in producing an application based on the diamonds dataset included in the ggplot2 package. You'll create a single application, but the interface will be reskinned and rebuilt throughout using different methods to illustrate their uses and functions using HTML, CSS, and JavaScript. You will also learn to develop an application that creates documents and reports using R Markdown. Furthermore, the book demonstrates the use of HTML templates and the Bootstrap framework. Moving along, you will learn how to produce dashboards using the Shiny command and dashboard package. Finally, you will learn how to lay out applications using a wide range of built-in functions. By the end of the book, you will have an understanding of the principles that underpin layout in Shiny applications, including sections of HTML added to a vanilla Shiny application, HTML interfaces written from scratch, dashboards, navigation bars, and interfaces. What you will learn Add HTML to a Shiny application and write its interfaces from scratch in HTML Use built-in Shiny functions to produce attractive and flexible layouts Produce dashboards, adding icons and notifications Explore Bootstrap themes to lay out your applications Get insights into UI development with hands-on examples Use R Markdown to create and download reports Who this book

is for If you have some experience writing Shiny applications and want to use HTML, CSS, and Bootstrap to make custom interfaces, then this book is for you.

R Markdown Yihui Xie 2018-07-27 R Markdown: The Definitive Guide is the first official book authored by the core R Markdown developers that provides a comprehensive and accurate reference to the R Markdown ecosystem. With R Markdown, you can easily create reproducible data analysis reports, presentations, dashboards, interactive applications, books, dissertations, websites, and journal articles, while enjoying the simplicity of Markdown and the great power of R and other languages. In this book, you will learn Basics: Syntax of Markdown and R code chunks, how to generate figures and tables, and how to use other computing languages Built-in output formats of R Markdown: PDF/HTML/Word/RTF/Markdown documents and ioslides/Slidy/Beamer/PowerPoint presentations Extensions and applications: Dashboards, Tufte handouts, xaringan/reveal.js presentations, websites, books, journal articles, and interactive tutorials Advanced topics: Parameterized reports, HTML widgets, document templates, custom output formats, and Shiny documents. Yihui Xie is a software engineer at RStudio. He has authored and co-authored several R packages, including knitr, rmarkdown, bookdown, blogdown, shiny, xaringan, and animation. He has published three other books, Dynamic Documents with R and knitr, bookdown: Authoring Books and Technical Documents with R Markdown, and blogdown: Creating Websites with R Markdown. J.J. Allaire is the founder of RStudio and the creator of the RStudio IDE. He is an author of several packages in the R Markdown ecosystem including rmarkdown, flexdashboard, learnr, and radix. Garrett Grolemund is the co-author of R for Data Science and author of Hands-On Programming with R. He wrote the lubridate R package and works for RStudio as an advocate who trains engineers to do data science with R and the Tidyverse.

Learning Mobile App Development Jakob Iversen 2013-12-17 The Only Tutorial Covering BOTH iOS and Android—for students and professionals alike! Now, one book can help you master mobile app development with both market-leading platforms: Apple's iOS and Google's Android. Perfect for both students and professionals, Learning Mobile App Development is the only tutorial with complete parallel coverage of both iOS and Android. With this guide, you can master either platform, or both—and gain a deeper understanding of the issues associated with developing mobile apps. You'll develop an actual working app on both iOS and Android, mastering the entire mobile app development lifecycle, from planning through licensing and distribution. Each tutorial in this book has been carefully designed to support readers with widely varying backgrounds and has been extensively tested in live developer training courses. If you're new to iOS, you'll also find an easy, practical introduction to Objective-C, Apple's native language. All source code for this book, organized by chapter, is available at https://github.com/LearningMobile/BookApps Coverage includes

Understanding the unique design challenges associated with mobile apps Setting up your Android and iOS development environments Mastering Eclipse development tools for Android and Xcode 5 tools for iOS Designing interfaces and navigation schemes that leverage each platform's power Reliably integrating persistent data into your apps Using lists (Android) or tables (iOS) to effectively present data to users Capturing device location, displaying it, and using it in your apps Accessing hardware devices and sensors Publishing custom apps internally within an organization Monetizing your apps on Apple's AppStore or the Google Play marketplace, as well as other ways of profiting from app development, such as consulting and developer jobs

R Programming Fundamentals Kaelen Medeiros 2018-09-27 Study data analysis and visualization to successfully analyze data with R Key FeaturesGet to grips with data cleaning methodsExplore statistical concepts and programming in R, including best practicesBuild a data science project with real-world examplesBook Description R Programming Fundamentals, focused on R and the R ecosystem, introduces you to the tools for working with data. To start with, you'll understand you how to set up R and RStudio, followed by exploring R packages, functions, data structures, control flow, and loops. Once you have grasped the basics, you'll move on to studying data visualization and graphics. You'll learn how to build statistical and advanced plots using the powerful ggplot2 library. In addition to this, you'll discover data management concepts such as factoring, pivoting, aggregating, merging, and dealing with missing values. By the end of this book, you'll have completed an entire data science project of your own for your portfolio or blog. What you will learnUse basic programming concepts of R such as loading packages, arithmetic functions, data structures, and flow controlImport data to R from various formats such as CSV, Excel, and SQLClean data by handling missing values and standardizing fieldsPerform univariate and bivariate analysis using ggplot2Create statistical summary and advanced plots such as histograms, scatter plots, box plots, and interaction plotsApply data management techniques, such as factoring, pivoting, aggregating, merging, and dealing with missing values, on the example datasetsWho this book is for R Programming Fundamentals is for you if you are an analyst who wants to grow in the field of data science and explore the latest tools.

Fundamentals of Data Visualization Claus O. Wilke 2019-03-18 Effective visualization is the best way to communicate information from the increasingly large and complex datasets in the natural and social sciences. But with the increasing power of visualization software today, scientists, engineers, and business analysts often have to navigate a bewildering array of visualization choices and options. This practical book takes you through many commonly encountered visualization problems, and it provides guidelines on how to turn large datasets into clear and compelling figures. What visualization type is best for the story you want to tell? How

do you make informative figures that are visually pleasing? Author Claus O. Wilke teaches you the elements most critical to successful data visualization. Explore the basic concepts of color as a tool to highlight, distinguish, or represent a value Understand the importance of redundant coding to ensure you provide key information in multiple ways Use the book's visualizations directory, a graphical guide to commonly used types of data visualizations Get extensive examples of good and bad figures Learn how to use figures in a document or report and how employ them effectively to tell a compelling story

Hands-On Data Science with R Vitor Bianchi Lanzetta 2018-11-30 A hands-on guide for professionals to perform various data science tasks in R Key FeaturesExplore the popular R packages for data scienceUse R for efficient data mining, text analytics and feature engineeringBecome a thorough data science professional with the help of hands-on examples and use-cases in RBook Description R is the most widely used programming language, and when used in association with data science, this powerful combination will solve the complexities involved with unstructured datasets in the real world. This book covers the entire data science ecosystem for aspiring data scientists, right from zero to a level where you are confident enough to get hands-on with real-world data science problems. The book starts with an introduction to data science and introduces readers to popular R libraries for executing data science routine tasks. This book covers all the important processes in data science such as data gathering, cleaning data, and then uncovering patterns from it. You will explore algorithms such as machine learning algorithms, predictive analytical models, and finally deep learning algorithms. You will learn to run the most powerful visualization packages available in R so as to ensure that you can easily derive insights from your data. Towards the end, you will also learn how to integrate R with Spark and Hadoop and perform large-scale data analytics without much complexity. What you will learnUnderstand the R programming language and its ecosystem of packages for data scienceObtain and clean your data before processingMaster essential exploratory techniques for summarizing dataExamine various machine learning prediction, modelsExplore the H2O analytics platform in R for deep learningApply data mining techniques to available datasetsWork with interactive visualization packages in RIntegrate R with Spark and Hadoop for large-scale data analyticsWho this book is for If you are a budding data scientist keen to learn about the popular pandas library, or a Python developer looking to step into the world of data analysis, this book is the ideal resource you need to get started. Some programming experience in Python will be helpful to get the most out of this course

R for Data Science Cookbook Yu-Wei, Chiu (David Chiu) 2016-07-29 Over 100 hands-on recipes to effectively solve real-world data problems using the most popular R packages and techniques About This Book Gain insight into how data scientists collect, process, analyze, and visualize data using some of the

most popular R packages Understand how to apply useful data analysis techniques in R for real-world applications An easy-to-follow guide to make the life of data scientist easier with the problems faced while performing data analysis Who This Book Is For This book is for those who are already familiar with the basic operation of R, but want to learn how to efficiently and effectively analyze real-world data problems using practical R packages. What You Will Learn Get to know the functional characteristics of R language Extract, transform, and load data from heterogeneous sources Understand how easily R can confront probability and statistics problems Get simple R instructions to quickly organize and manipulate large datasets Create professional data visualizations and interactive reports Predict user purchase behavior by adopting a classification approach Implement data mining techniques to discover items that are frequently purchased together Group similar text documents by using various clustering methods In Detail This cookbook offers a range of data analysis samples in simple and straightforward R code, providing step-by-step resources and time-saving methods to help you solve data problems efficiently. The first section deals with how to create R functions to avoid the unnecessary duplication of code. You will learn how to prepare, process, and perform sophisticated ETL for heterogeneous data sources with R packages. An example of data manipulation is provided, illustrating how to use the "dplyr" and "data.table" packages to efficiently process larger data structures. We also focus on "ggplot2" and show you how to create advanced figures for data exploration. In addition, you will learn how to build an interactive report using the "ggvis" package. Later chapters offer insight into time series analysis on financial data, while there is detailed information on the hot topic of machine learning, including data classification, regression, clustering, association rule mining, and dimension reduction. By the end of this book, you will understand how to resolve issues and will be able to comfortably offer solutions to problems encountered while performing data analysis. Style and approach This easy-to-follow guide is full of hands-on examples of data analysis with R. Each topic is fully explained beginning with the core concept, followed by step-by-step practical examples, and concluding with detailed explanations of each concept used.

Learn Android App Development Wallace Jackson 2013-08-20 Learn Android App Development is a hands-on tutorial and useful reference. You'll quickly get up to speed and master the Android SDK and the Java that you need for your Android Apps. The Android SDK offers powerful features, and this book is the fastest path to mastering them—and the rest of the Andorid SDK—for programmers with some experience who are new to Android smartphone and tablet apps development. Many books introduce the Android SDK, but very few explain how to develop apps optimally. This book teaches both core Java language concepts and how to wisely but rapidly employ the design patterns and logic using the Android SDK, which is based on Java APIs.

You'll also learn best practices that ensure your code will be efficient and perform well. Get an accelerated but complete enough treatment of the fundamentals of Java necessary to get you started. Design your first app using prototyping and other design methods. Build your first Android app using the code given over the course of the book. Finally, debug and distribute your first app on Google Play or other Android app store. After reading this book, you'll have your first app ready and on the app store, earning you the prestige and the money you seek.

Web Application Development with R Using Shiny Chris Beeley 2013 This book follows a standard tutorial-based approach which will teach you how to make a web app using R and Shiny quickly and easily.This book is for anybody who wants to produce interactive data summaries over the Web, whether you want to share them with a few colleagues or the whole world. You need no previous experience with R, Shiny, HTML, or CSS to begin using this book, although you will need at least a little previous experience with programming in a different language.

Learning Shiny Hernan G. Resnizky 2015-10-16 Make the most of R's dynamic capabilities and implement web applications with Shiny About This Book Present interactive data visualizations in R within the Shiny framework Construct web dashboards in a simple, intuitive, but fully flexible environment Apply your skills to create a real-world web application with this step-by-step guide Who This Book Is For If you are a data scientist who needs a platform to show your results to a broader audience in an attractive and visual way, or a web developer with no prior experience in R or Shiny, this is the book for you. What You Will Learn Comprehend many useful functions, such as lapply and apply, to process data in R Write and structure different files to create a basic dashboard Develop graphics in R using popular graphical libraries such as ggplot2 and GoogleVis Mount a dashboard on a Linux Server Integrate Shiny with non-R-native visualization, such as D3.js Design and build a web application In Detail R is nowadays one of the most used tools in data science. However, along with Shiny, it is also gaining territory in the web application world, due to its simplicity and flexibility. Shiny is a framework that enables the creation of interactive visualizations written entirely in R and can be displayed in almost any ordinary web browser. It is a package from RStudio, which is an IDE for R. From the fundamentals of R to the administration of multi-concurrent, fully customized web applications, this book explains how to achieve your desired web application in an easy and gradual way. You will start by learning about the fundamentals of R, and will move on to looking at simple and practical examples. These examples will enable you to grasp many useful tools that will assist you in solving the usual problems that can be faced when developing data visualizations. You will then walk through the integration of Shiny with R in general and view the different visualization possibilities out there. Finally, you will put your

skills to the test and create your first web application! Style and approach This is a comprehensive, step-by-step guide that will allow you to learn and make full use of R and Shiny's capabilities in a gradual way, together with clear, applied examples.

Using R and RStudio for Data Management, Statistical Analysis, and Graphics Nicholas J. Horton 2015-03-10 Improve Your Analytical SkillsIncorporating the latest R packages as well as new case studies and applications, Using R and RStudio for Data Management, Statistical Analysis, and Graphics, Second Edition covers the aspects of R most often used by statistical analysts. New users of R will find the book's simple approach easy to understand while more

Mastering Shiny Hadley Wickham 2021-04-29 Master the Shiny web framework—and take your R skills to a whole new level. By letting you move beyond static reports, Shiny helps you create fully interactive web apps for data analyses. Users will be able to jump between datasets, explore different subsets or facets of the data, run models with parameter values of their choosing, customize visualizations, and much more. Hadley Wickham from RStudio shows data scientists, data analysts, statisticians, and scientific researchers with no knowledge of HTML, CSS, or JavaScript how to create rich web apps from R. This in-depth guide provides a learning path that you can follow with confidence, as you go from a Shiny beginner to an expert developer who can write large, complex apps that are maintainable and performant. Get started: Discover how the major pieces of a Shiny app fit together Put Shiny in action: Explore Shiny functionality with a focus on code samples, example apps, and useful techniques Master reactivity: Go deep into the theory and practice of reactive programming and examine reactive graph components Apply best practices: Examine useful techniques for making your Shiny apps work well in production