

Learning Predictive Analytics With R Packt Publishing

As recognized, adventure as competently as experience approximately lesson, amusement, as without difficulty as concord can be gotten by just checking out a ebook **Learning Predictive Analytics With R Packt Publishing** also it is not directly done, you could tolerate even more roughly speaking this life, vis--vis the world.

We manage to pay for you this proper as without difficulty as simple mannerism to get those all. We allow Learning Predictive Analytics With R Packt Publishing and numerous book collections from fictions to scientific research in any way. accompanied by them is this Learning Predictive Analytics With R Packt Publishing that can be your partner.

Mastering Machine Learning with R Cory Lesmeister
2015-10-28 Master machine learning techniques with R to deliver insights for complex projects About This Book Get to grips with the application of Machine Learning methods using an extensive set of R packages Understand the benefits and potential pitfalls of using machine learning methods Implement the numerous powerful features offered by R with this comprehensive guide to building an independent R-based ML system Who This Book Is For If you want to learn how to use R's machine learning capabilities to solve complex business problems, then this book is for you. Some experience with R and a working knowledge of basic statistical or machine learning will prove helpful. What You Will Learn Gain deep insights to learn the applications of machine learning tools to the industry Manipulate data in R efficiently to prepare it for analysis Master the skill of recognizing techniques for effective visualization of data Understand why and how to create test and training

data sets for analysis Familiarize yourself with fundamental learning methods such as linear and logistic regression Comprehend advanced learning methods such as support vector machines Realize why and how to apply unsupervised learning methods In Detail Machine learning is a field of Artificial Intelligence to build systems that learn from data. Given the growing prominence of R—a cross-platform, zero-cost statistical programming environment—there has never been a better time to start applying machine learning to your data. The book starts with introduction to Cross-Industry Standard Process for Data Mining. It takes you through Multivariate Regression in detail. Moving on, you will also address Classification and Regression trees. You will learn a couple of “Unsupervised techniques”. Finally, the book will walk you through text analysis and time series. The book will deliver practical and real-world solutions to problems and variety of tasks such as complex recommendation systems. By the end of this book, you will gain expertise in performing R machine learning and

will be able to build complex ML projects using R and its packages. Style and approach This is a book explains complicated concepts with easy to follow theory and real-world, practical applications. It demonstrates the power of R and machine learning extensively while highlighting the constraints.

Become a Python Data Analyst Alvaro Fuentes 2018-08-31 Enhance your data analysis and predictive modeling skills using popular Python tools Key Features Cover all fundamental libraries for operation and manipulation of Python for data analysis Implement real-world datasets to perform predictive analytics with Python Access modern data analysis techniques and detailed code with scikit-learn and SciPy Book Description Python is one of the most common and popular languages preferred by leading data analysts and statisticians for working with massive datasets and complex data visualizations. Become a Python Data Analyst introduces Python's most essential tools and libraries necessary to work with the data analysis process, right from preparing data to performing simple statistical analyses and creating meaningful data visualizations. In this book, we will cover Python libraries such as NumPy, pandas, matplotlib, seaborn, SciPy, and scikit-learn, and apply them in practical data analysis and statistics examples. As you make your way through the chapters, you will learn to efficiently use the Jupyter Notebook to operate and manipulate data using NumPy and the pandas library. In the concluding chapters, you will gain experience in building simple predictive models and carrying out statistical computation and analysis using rich Python tools and proven data analysis techniques. By the end of this book, you will have hands-on experience performing data analysis with Python. What you will learn Explore

important Python libraries and learn to install Anaconda distribution Understand the basics of NumPy Produce informative and useful visualizations for analyzing data Perform common statistical calculations Build predictive models and understand the principles of predictive analytics Who this book is for Become a Python Data Analyst is for entry-level data analysts, data engineers, and BI professionals who want to make complete use of Python tools for performing efficient data analysis. Prior knowledge of Python programming is necessary to understand the concepts covered in this book

R: Predictive Analysis Tony Fischetti 2017-03-31 Master the art of predictive modeling About This Book Load, wrangle, and analyze your data using the world's most powerful statistical programming language Familiarize yourself with the most common data mining tools of R, such as k-means, hierarchical regression, linear regression, Naive Bayes, decision trees, text mining and so on. We emphasize important concepts, such as the bias-variance trade-off and over-fitting, which are pervasive in predictive modeling Who This Book Is For If you work with data and want to become an expert in predictive analysis and modeling, then this Learning Path will serve you well. It is intended for budding and seasoned practitioners of predictive modeling alike. You should have basic knowledge of the use of R, although it's not necessary to put this Learning Path to great use. What You Will Learn Get to know the basics of R's syntax and major data structures Write functions, load data, and install packages Use different data sources in R and know how to interface with databases, and request and load JSON and XML Identify the challenges and apply your knowledge about data analysis in R to imperfect

real-world data Predict the future with reasonably simple algorithms Understand key data visualization and predictive analytic skills using R Understand the language of models and the predictive modeling process In Detail Predictive analytics is a field that uses data to build models that predict a future outcome of interest. It can be applied to a range of business strategies and has been a key player in search advertising and recommendation engines. The power and domain-specificity of R allows the user to express complex analytics easily, quickly, and succinctly. R offers a free and open source environment that is perfect for both learning and deploying predictive modeling solutions in the real world. This Learning Path will provide you with all the steps you need to master the art of predictive modeling with R. We start with an introduction to data analysis with R, and then gradually you'll get your feet wet with predictive modeling. You will get to grips with the fundamentals of applied statistics and build on this knowledge to perform sophisticated and powerful analytics. You will be able to solve the difficulties relating to performing data analysis in practice and find solutions to working with "messy data", large data, communicating results, and facilitating reproducibility. You will then perform key predictive analytics tasks using R, such as train and test predictive models for classification and regression tasks, score new data sets and so on. By the end of this Learning Path, you will have explored and tested the most popular modeling techniques in use on real-world data sets and mastered a diverse range of techniques in predictive analytics. This Learning Path combines some of the best that Packt has to offer in one complete, curated package. It includes content from the following

Packt products: Data Analysis with R, Tony Fischetti Learning Predictive Analytics with R, Eric Mayor Mastering Predictive Analytics with R, Rui Miguel Forte Style and approach Learn data analysis using engaging examples and fun exercises, and with a gentle and friendly but comprehensive "learn-by-doing" approach. This is a practical course, which analyzes compelling data about life, health, and death with the help of tutorials. It offers you a useful way of interpreting the data that's specific to this course, but that can also be applied to any other data. This course is designed to be both a guide and a reference for moving beyond the basics of predictive modeling. *Statistics for Machine Learning* Pratap Dangeti 2017-07-21 Build Machine Learning models with a sound statistical understanding. About This Book Learn about the statistics behind powerful predictive models with p-value, ANOVA, and F- statistics. Implement statistical computations programmatically for supervised and unsupervised learning through K-means clustering. Master the statistical aspect of Machine Learning with the help of this example-rich guide to R and Python. Who This Book Is For This book is intended for developers with little to no background in statistics, who want to implement Machine Learning in their systems. Some programming knowledge in R or Python will be useful. What You Will Learn Understand the Statistical and Machine Learning fundamentals necessary to build models Understand the major differences and parallels between the statistical way and the Machine Learning way to solve problems Learn how to prepare data and feed models by using the appropriate Machine Learning algorithms from the more-than-adequate R and Python packages Analyze the results and tune the model appropriately to

your own predictive goals Understand the concepts of required statistics for Machine Learning Introduce yourself to necessary fundamentals required for building supervised & unsupervised deep learning models Learn reinforcement learning and its application in the field of artificial intelligence domain In Detail Complex statistics in Machine Learning worry a lot of developers. Knowing statistics helps you build strong Machine Learning models that are optimized for a given problem statement. This book will teach you all it takes to perform complex statistical computations required for Machine Learning. You will gain information on statistics behind supervised learning, unsupervised learning, reinforcement learning, and more. Understand the real-world examples that discuss the statistical side of Machine Learning and familiarize yourself with it. You will also design programs for performing tasks such as model, parameter fitting, regression, classification, density collection, and more. By the end of the book, you will have mastered the required statistics for Machine Learning and will be able to apply your new skills to any sort of industry problem. Style and approach This practical, step-by-step guide will give you an understanding of the Statistical and Machine Learning fundamentals you'll need to build models.

Big Data Analytics with R Simon Walkowiak 2016-07-29 Utilize R to uncover hidden patterns in your Big Data About This Book Perform computational analyses on Big Data to generate meaningful results Get a practical knowledge of R programming language while working on Big Data platforms like Hadoop, Spark, H2O and SQL/NoSQL databases, Explore fast, streaming, and scalable data analysis with the most cutting-edge technologies in the

market Who This Book Is For This book is intended for Data Analysts, Scientists, Data Engineers, Statisticians, Researchers, who want to integrate R with their current or future Big Data workflows. It is assumed that readers have some experience in data analysis and understanding of data management and algorithmic processing of large quantities of data, however they may lack specific skills related to R. What You Will Learn Learn about current state of Big Data processing using R programming language and its powerful statistical capabilities Deploy Big Data analytics platforms with selected Big Data tools supported by R in a cost-effective and time-saving manner Apply the R language to real-world Big Data problems on a multi-node Hadoop cluster, e.g. electricity consumption across various socio-demographic indicators and bike share scheme usage Explore the compatibility of R with Hadoop, Spark, SQL and NoSQL databases, and H2O platform In Detail Big Data analytics is the process of examining large and complex data sets that often exceed the computational capabilities. R is a leading programming language of data science, consisting of powerful functions to tackle all problems related to Big Data processing. The book will begin with a brief introduction to the Big Data world and its current industry standards. With introduction to the R language and presenting its development, structure, applications in real world, and its shortcomings. Book will progress towards revision of major R functions for data management and transformations. Readers will be introduced to Cloud based Big Data solutions (e.g. Amazon EC2 instances and Amazon RDS, Microsoft Azure and its HDInsight clusters) and also provide guidance on R connectivity with relational and non-relational

databases such as MongoDB and HBase etc. It will further expand to include Big Data tools such as Apache Hadoop ecosystem, HDFS and MapReduce frameworks. Also other R compatible tools such as Apache Spark, its machine learning library Spark MLlib, as well as H2O. Style and approach This book will serve as a practical guide to tackling Big Data problems using R programming language and its statistical environment. Each section of the book will present you with concise and easy-to-follow steps on how to process, transform and analyse large data sets.

Managing Data Science Kirill Dubovikov 2019-11-12

Understand data science concepts and methodologies to manage and deliver top-notch solutions for your organization Key Features Learn the basics of data science and explore its possibilities and limitations Manage data science projects and assemble teams effectively even in the most challenging situations Understand management principles and approaches for data science projects to streamline the innovation process Book Description Data science and machine learning can transform any organization and unlock new opportunities. However, employing the right management strategies is crucial to guide the solution from prototype to production. Traditional approaches often fail as they don't entirely meet the conditions and requirements necessary for current data science projects. In this book, you'll explore the right approach to data science project management, along with useful tips and best practices to guide you along the way. After understanding the practical applications of data science and artificial intelligence, you'll see how to incorporate them into your solutions. Next, you will go through the data science project life cycle, explore the

common pitfalls encountered at each step, and learn how to avoid them. Any data science project requires a skilled team, and this book will offer the right advice for hiring and growing a data science team for your organization. Later, you'll be shown how to efficiently manage and improve your data science projects through the use of DevOps and ModelOps. By the end of this book, you will be well versed with various data science solutions and have gained practical insights into tackling the different challenges that you'll encounter on a daily basis. What you will learn Understand the underlying problems of building a strong data science pipeline Explore the different tools for building and deploying data science solutions Hire, grow, and sustain a data science team Manage data science projects through all stages, from prototype to production Learn how to use ModelOps to improve your data science pipelines Get up to speed with the model testing techniques used in both development and production stages Who this book is for This book is for data scientists, analysts, and program managers who want to use data science for business productivity by incorporating data science workflows efficiently. Some understanding of basic data science concepts will be useful to get the most out of this book.

Training Systems Using Python Statistical Modeling

Curtis Miller 2019-05-20 Leverage the power of Python and statistical modeling techniques for building accurate predictive models Key Features Get introduced to Python's rich suite of libraries for statistical modeling Implement regression, clustering and train neural networks from scratch Includes real-world examples on training end-to-end machine learning systems in Python Book Description Python's ease of use and

multi-purpose nature has led it to become the choice of tool for many data scientists and machine learning developers today. Its rich libraries are widely used for data analysis, and more importantly, for building state-of-the-art predictive models. This book takes you through an exciting journey, of using these libraries to implement effective statistical models for predictive analytics. You'll start by diving into classical statistical analysis, where you will learn to compute descriptive statistics using pandas. You will look at supervised learning, where you will explore the principles of machine learning and train different machine learning models from scratch. You will also work with binary prediction models, such as data classification using k-nearest neighbors, decision trees, and random forests. This book also covers algorithms for regression analysis, such as ridge and lasso regression, and their implementation in Python. You will also learn how neural networks can be trained and deployed for more accurate predictions, and which Python libraries can be used to implement them. By the end of this book, you will have all the knowledge you need to design, build, and deploy enterprise-grade statistical models for machine learning using Python and its rich ecosystem of libraries for predictive analytics. What you will learn Understand the importance of statistical modeling Learn about the various Python packages for statistical analysis Implement algorithms such as Naive Bayes, random forests, and more Build predictive models from scratch using Python's scikit-learn library Implement regression analysis and clustering Learn how to train a neural network in Python Who this book is for If you are a data scientist, a statistician or a machine learning developer looking to

train and deploy effective machine learning models using popular statistical techniques, then this book is for you. Knowledge of Python programming is required to get the most out of this book.

Learning Predictive Analytics with R Eric Mayor

2015-09-24 Get to grips with key data visualization and predictive analytic skills using R About This Book Acquire predictive analytic skills using various tools of R Make predictions about future events by discovering valuable information from data using R Comprehensive guidelines that focus on predictive model design with real-world data Who This Book Is For If you are a statistician, chief information officer, data scientist, ML engineer, ML practitioner, quantitative analyst, and student of machine learning, this is the book for you. You should have basic knowledge of the use of R. Readers without previous experience of programming in R will also be able to use the tools in the book. What You Will Learn Customize R by installing and loading new packages Explore the structure of data using clustering algorithms Turn unstructured text into ordered data, and acquire knowledge from the data Classify your observations using Naive Bayes, k-NN, and decision trees Reduce the dimensionality of your data using principal component analysis Discover association rules using Apriori Understand how statistical distributions can help retrieve information from data using correlations, linear regression, and multilevel regression Use PMML to deploy the models generated in R In Detail R is statistical software that is used for data analysis. There are two main types of learning from data: unsupervised learning, where the structure of data is extracted automatically; and supervised learning, where a labeled part of the data is used to learn the

relationship or scores in a target attribute. As important information is often hidden in a lot of data, R helps to extract that information with its many standard and cutting-edge statistical functions. This book is packed with easy-to-follow guidelines that explain the workings of the many key data mining tools of R, which are used to discover knowledge from your data. You will learn how to perform key predictive analytics tasks using R, such as train and test predictive models for classification and regression tasks, score new data sets and so on. All chapters will guide you in acquiring the skills in a practical way. Most chapters also include a theoretical introduction that will sharpen your understanding of the subject matter and invite you to go further. The book familiarizes you with the most common data mining tools of R, such as k-means, hierarchical regression, linear regression, association rules, principal component analysis, multilevel modeling, k-NN, Naive Bayes, decision trees, and text mining. It also provides a description of visualization techniques using the basic visualization tools of R as well as lattice for visualizing patterns in data organized in groups. This book is invaluable for anyone fascinated by the data mining opportunities offered by GNU R and its packages. Style and approach This is a practical book, which analyzes compelling data about life, health, and death with the help of tutorials. It offers you a useful way of interpreting the data that's specific to this book, but that can also be applied to any other data.

IBM SPSS Modeler Essentials Keith McCormick 2017-12-26
Get to grips with the fundamentals of data mining and predictive analytics with IBM SPSS Modeler About This Book Get up-and-running with IBM SPSS Modeler without

going into too much depth. Identify interesting relationships within your data and build effective data mining and predictive analytics solutions A quick, easy-to-follow guide to give you a fundamental understanding of SPSS Modeler, written by the best in the business Who This Book Is For This book is ideal for those who are new to SPSS Modeler and want to start using it as quickly as possible, without going into too much detail. An understanding of basic data mining concepts will be helpful, to get the best out of the book. What You Will Learn Understand the basics of data mining and familiarize yourself with Modeler's visual programming interface Import data into Modeler and learn how to properly declare metadata Obtain summary statistics and audit the quality of your data Prepare data for modeling by selecting and sorting cases, identifying and removing duplicates, combining data files, and modifying and creating fields Assess simple relationships using various statistical and graphing techniques Get an overview of the different types of models available in Modeler Build a decision tree model and assess its results Score new data and export predictions In Detail IBM SPSS Modeler allows users to quickly and efficiently use predictive analytics and gain insights from your data. With almost 25 years of history, Modeler is the most established and comprehensive Data Mining workbench available. Since it is popular in corporate settings, widely available in university settings, and highly compatible with all the latest technologies, it is the perfect way to start your Data Science and Machine Learning journey. This book takes a detailed, step-by-step approach to introducing data mining using the de facto standard process, CRISP-DM, and Modeler's easy to learn "visual programming"

style. You will learn how to read data into Modeler, assess data quality, prepare your data for modeling, find interesting patterns and relationships within your data, and export your predictions. Using a single case study throughout, this intentionally short and focused book sticks to the essentials. The authors have drawn upon their decades of teaching thousands of new users, to choose those aspects of Modeler that you should learn first, so that you get off to a good start using proven best practices. This book provides an overview of various popular data modeling techniques and presents a detailed case study of how to use CHAID, a decision tree model. Assessing a model's performance is as important as building it; this book will also show you how to do that. Finally, you will see how you can score new data and export your predictions. By the end of this book, you will have a firm understanding of the basics of data mining and how to effectively use Modeler to build predictive models. Style and approach This book empowers users to build practical & accurate predictive models quickly and intuitively. With the support of the advanced analytics users can discover hidden patterns and trends. This will help users to understand the factors that influence them, enabling you to take advantage of business opportunities and mitigate risks.

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 Features
Explore the popular R packages for data science
Use R for efficient data mining, text analytics and feature engineering
Become a thorough data science professional with the help of hands-on examples and use-cases in R
Book 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 learn
Understand the R programming language and its ecosystem of packages for data science
Obtain and clean your data before processing
Master essential exploratory techniques for summarizing data
Examine various machine learning prediction, models
Explore the H2O analytics platform in R for deep learning
Apply data mining techniques to available datasets
Work with interactive visualization packages in R
Integrate R with Spark and Hadoop for large-scale data analytics
Who 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

Advanced Analytics with R and Tableau Jen Stirrup
2017-08-22 Leverage the power of advanced analytics and predictive modeling in Tableau using the statistical powers of R About This Book A comprehensive guide that will bring out the creativity in you to visualize the results of complex calculations using Tableau and R Combine Tableau analytics and visualization with the power of R using this step-by-step guide Wondering how R can be used with Tableau? This book is your one-stop solution. Who This Book Is For This book will appeal to Tableau users who want to go beyond the Tableau interface and deploy the full potential of Tableau, by using R to perform advanced analytics with Tableau. A basic familiarity with R is useful but not compulsory, as the book will start off with concrete examples of R and will move quickly into more advanced spheres of analytics using online data sources to support hands-on learning. Those R developers who want to integrate R in Tableau will also benefit from this book. What You Will Learn Integrate Tableau's analytics with the industry-standard, statistical prowess of R. Make R function calls in Tableau, and visualize R functions with Tableau using RServe. Use the CRISP-DM methodology to create a roadmap for analytics investigations. Implement various supervised and unsupervised learning algorithms in R to return values to Tableau. Make quick, cogent, and data-driven decisions for your business using advanced analytical techniques such as forecasting, predictions, association rules, clustering, classification, and other advanced Tableau/R calculated field functions. In Detail Tableau and R offer accessible analytics by allowing a combination of easy-to-use data visualization along with industry-standard, robust statistical computation. Moving from data visualization into deeper, more

advanced analytics? This book will intensify data skills for data viz-savvy users who want to move into analytics and data science in order to enhance their businesses by harnessing the analytical power of R and the stunning visualization capabilities of Tableau. Readers will come across a wide range of machine learning algorithms and learn how descriptive, prescriptive, predictive, and visually appealing analytical solutions can be designed with R and Tableau. In order to maximize learning, hands-on examples will ease the transition from being a data-savvy user to a data analyst using sound statistical tools to perform advanced analytics. By the end of this book, you will get to grips with advanced calculations in R and Tableau for analytics and prediction with the help of use cases and hands-on examples. Style and approach Tableau (uniquely) offers excellent visualization combined with advanced analytics; R is at the pinnacle of statistical computational languages. When you want to move from one view of data to another, backed up by complex computations, the combination of R and Tableau makes the perfect solution. This example-rich guide will teach you how to combine these two to perform advanced analytics by integrating Tableau with R and create beautiful data visualizations.

Mastering Predictive Analytics with R James D. Miller
2017-08-18 Master the craft of predictive modeling in R by developing strategy, intuition, and a solid foundation in essential concepts About This Book Grasping the major methods of predictive modeling and moving beyond black box thinking to a deeper level of understanding Leveraging the flexibility and modularity of R to experiment with a range of different techniques and data types Packed with practical advice and tips

explaining important concepts and best practices to help you understand quickly and easily Who This Book Is For Although budding data scientists, predictive modelers, or quantitative analysts with only basic exposure to R and statistics will find this book to be useful, the experienced data scientist professional wishing to attain master level status , will also find this book extremely valuable.. This book assumes familiarity with the fundamentals of R, such as the main data types, simple functions, and how to move data around. Although no prior experience with machine learning or predictive modeling is required, there are some advanced topics provided that will require more than novice exposure. What You Will Learn Master the steps involved in the predictive modeling process Grow your expertise in using R and its diverse range of packages Learn how to classify predictive models and distinguish which models are suitable for a particular problem Understand steps for tidying data and improving the performing metrics Recognize the assumptions, strengths, and weaknesses of a predictive model Understand how and why each predictive model works in R Select appropriate metrics to assess the performance of different types of predictive model Explore word embedding and recurrent neural networks in R Train models in R that can work on very large datasets In Detail R offers a free and open source environment that is perfect for both learning and deploying predictive modeling solutions. With its constantly growing community and plethora of packages, R offers the functionality to deal with a truly vast array of problems. The book begins with a dedicated chapter on the language of models and the predictive modeling process. You will understand the learning curve and the process of tidying data. Each subsequent chapter tackles

a particular type of model, such as neural networks, and focuses on the three important questions of how the model works, how to use R to train it, and how to measure and assess its performance using real-world datasets. How do you train models that can handle really large datasets? This book will also show you just that. Finally, you will tackle the really important topic of deep learning by implementing applications on word embedding and recurrent neural networks. By the end of this book, you will have explored and tested the most popular modeling techniques in use on real- world datasets and mastered a diverse range of techniques in predictive analytics using R. Style and approach This book takes a step-by-step approach in explaining the intermediate to advanced concepts in predictive analytics. Every concept is explained in depth, supplemented with practical examples applicable in a real-world setting.

Hands-On Data Science and Python Machine Learning Frank Kane 2017-07-31 This book covers the fundamentals of machine learning with Python in a concise and dynamic manner. It covers data mining and large-scale machine learning using Apache Spark. About This Book Take your first steps in the world of data science by understanding the tools and techniques of data analysis Train efficient Machine Learning models in Python using the supervised and unsupervised learning methods Learn how to use Apache Spark for processing Big Data efficiently Who This Book Is For If you are a budding data scientist or a data analyst who wants to analyze and gain actionable insights from data using Python, this book is for you. Programmers with some experience in Python who want to enter the lucrative world of Data Science will also find this book to be very useful, but

you don't need to be an expert Python coder or mathematician to get the most from this book. What You Will Learn Learn how to clean your data and ready it for analysis Implement the popular clustering and regression methods in Python Train efficient machine learning models using decision trees and random forests Visualize the results of your analysis using Python's Matplotlib library Use Apache Spark's MLlib package to perform machine learning on large datasets In Detail Join Frank Kane, who worked on Amazon and IMDb's machine learning algorithms, as he guides you on your first steps into the world of data science. Hands-On Data Science and Python Machine Learning gives you the tools that you need to understand and explore the core topics in the field, and the confidence and practice to build and analyze your own machine learning models. With the help of interesting and easy-to-follow practical examples, Frank Kane explains potentially complex topics such as Bayesian methods and K-means clustering in a way that anybody can understand them. Based on Frank's successful data science course, Hands-On Data Science and Python Machine Learning empowers you to conduct data analysis and perform efficient machine learning using Python. Let Frank help you unearth the value in your data using the various data mining and data analysis techniques available in Python, and to develop efficient predictive models to predict future results. You will also learn how to perform large-scale machine learning on Big Data using Apache Spark. The book covers preparing your data for analysis, training machine learning models, and visualizing the final data analysis. Style and approach This comprehensive book is a perfect blend of theory and hands-on code examples in Python which can be used for your reference at any time.

R Data Analysis Projects Gopi Subramanian 2017-11-17 Get valuable insights from your data by building data analysis systems from scratch with R. About This Book A handy guide to take your understanding of data analysis with R to the next level Real-world projects that focus on problems in finance, network analysis, social media, and more From data manipulation to analysis to visualization in R, this book will teach you everything you need to know about building end-to-end data analysis pipelines using R Who This Book Is For If you are looking for a book that takes you all the way through the practical application of advanced and effective analytics methodologies in R, then this is the book for you. A fundamental understanding of R and the basic concepts of data analysis is all you need to get started with this book. What You Will Learn Build end-to-end predictive analytics systems in R Build an experimental design to gather your own data and conduct analysis Build a recommender system from scratch using different approaches Use and leverage RShiny to build reactive programming applications Build systems for varied domains including market research, network analysis, social media analysis, and more Explore various R Packages such as RShiny, ggplot, recommenderlab, dplyr, and find out how to use them effectively Communicate modeling results using Shiny Dashboards Perform multi-variate time-series analysis prediction, supplemented with sensitivity analysis and risk modeling In Detail R offers a large variety of packages and libraries for fast and accurate data analysis and visualization. As a result, it's one of the most popularly used languages by data scientists and analysts, or anyone who wants to perform data analysis. This book will demonstrate how you can put to use your existing knowledge of data

analysis in R to build highly efficient, end-to-end data analysis pipelines without any hassle. You'll start by building a content-based recommendation system, followed by building a project on sentiment analysis with tweets. You'll implement time-series modeling for anomaly detection, and understand cluster analysis of streaming data. You'll work through projects on performing efficient market data research, building recommendation systems, and analyzing networks accurately, all provided with easy to follow codes. With the help of these real-world projects, you'll get a better understanding of the challenges faced when building data analysis pipelines, and see how you can overcome them without compromising on the efficiency or accuracy of your systems. The book covers some popularly used R packages such as dplyr, ggplot2, RShiny, and others, and includes tips on using them effectively. By the end of this book, you'll have a better understanding of data analysis with R, and be able to put your knowledge to practical use without any hassle. Style and approach This book takes a unique, learn-as-you-do approach, as you build on your understanding of data analysis progressively with each project. This book is designed in a way that implementing each project will empower you with a unique skill set, and enable you to implement the next project more confidently.

Learning Social Media Analytics with R Raghav Bali
2017-05-26 Tap into the realm of social media and unleash the power of analytics for data-driven insights using R About This Book A practical guide written to help leverage the power of the R eco-system to extract, process, analyze, visualize and model social media data Learn about data access, retrieval, cleaning, and curation methods for data originating from various

social media platforms. Visualize and analyze data from social media platforms to understand and model complex relationships using various concepts and techniques such as Sentiment Analysis, Topic Modeling, Text Summarization, Recommendation Systems, Social Network Analysis, Classification, and Clustering. Who This Book Is For It is targeted at IT professionals, Data Scientists, Analysts, Developers, Machine Learning Enthusiasts, social media marketers and anyone with a keen interest in data, analytics, and generating insights from social data. Some background experience in R would be helpful, but not necessary, since this book is written keeping in mind, that readers can have varying levels of expertise. What You Will Learn Learn how to tap into data from diverse social media platforms using the R ecosystem Use social media data to formulate and solve real-world problems Analyze user social networks and communities using concepts from graph theory and network analysis Learn to detect opinion and sentiment, extract themes, topics, and trends from unstructured noisy text data from diverse social media channels Understand the art of representing actionable insights with effective visualizations Analyze data from major social media channels such as Twitter, Facebook, Flickr, Foursquare, Github, StackExchange, and so on Learn to leverage popular R packages such as ggplot2, topicmodels, caret, e1071, tm, wordcloud, twittR, Rfacebook, dplyr, reshape2, and many more In Detail The Internet has truly become humongous, especially with the rise of various forms of social media in the last decade, which give users a platform to express themselves and also communicate and collaborate with each other. This book will help the reader to understand the current social media landscape and to learn how

analytics can be leveraged to derive insights from it. This data can be analyzed to gain valuable insights into the behavior and engagement of users, organizations, businesses, and brands. It will help readers frame business problems and solve them using social data. The book will also cover several practical real-world use cases on social media using R and its advanced packages to utilize data science methodologies such as sentiment analysis, topic modeling, text summarization, recommendation systems, social network analysis, classification, and clustering. This will enable readers to learn different hands-on approaches to obtain data from diverse social media sources such as Twitter and Facebook. It will also show readers how to establish detailed workflows to process, visualize, and analyze data to transform social data into actionable insights. Style and approach This book follows a step-by-step approach with detailed strategies for understanding, extracting, analyzing, visualizing, and modeling data from several major social network platforms such as Facebook, Twitter, Foursquare, Flickr, Github, and StackExchange. The chapters cover several real-world use cases and leverage data science, machine learning, network analysis, and graph theory concepts along with the R ecosystem, including popular packages such as ggplot2, caret, dplyr, topicmodels, tm, and so on.

Microsoft Azure Machine Learning Sumit Mund 2015-06-16 This book provides you with the skills necessary to get started with Azure Machine Learning to build predictive models as quickly as possible, in a very intuitive way, whether you are completely new to predictive analysis or an existing practitioner. The book starts by exploring ML Studio, the browser-based development environment, and explores the first step—data exploration and

visualization. You will then build different predictive models using both supervised and unsupervised algorithms, including a simple recommender system. The focus then shifts to learning how to deploy a model to production and publishing it as an API. The book ends with a couple of case studies using all the concepts and skills you have learned throughout the book to solve real-world problems.

STATISTICS FOR MACHINE LEARNING - PRATAP. DANGETI 2019
TensorFlow: Powerful Predictive Analytics with TensorFlow Md. Rezaul Karim 2018-03-14 Learn how to solve real life problems using different methods like logic regression, random forests and SVM's with TensorFlow. Key Features Understand predictive analytics along with its challenges and best practices Embedded with assessments that will help you revise the concepts you have learned in this book Book Description Predictive analytics discovers hidden patterns from structured and unstructured data for automated decision making in business intelligence. Predictive decisions are becoming a huge trend worldwide, catering to wide industry sectors by predicting which decisions are more likely to give maximum results. TensorFlow, Google's brainchild, is immensely popular and extensively used for predictive analysis. This book is a quick learning guide on all the three types of machine learning, that is, supervised, unsupervised, and reinforcement learning with TensorFlow. This book will teach you predictive analytics for high-dimensional and sequence data. In particular, you will learn the linear regression model for regression analysis. You will also learn how to use regression for predicting continuous values. You will learn supervised learning algorithms for predictive analytics. You will explore unsupervised learning and

clustering using K-means You will then learn how to predict neighborhoods using K-means, and then, see another example of clustering audio clips based on their audio features. This book is ideal for developers, data analysts, machine learning practitioners, and deep learning enthusiasts who want to build powerful, robust, and accurate predictive models with the power of TensorFlow. This book is embedded with useful assessments that will help you revise the concepts you have learned in this book. What you will learn Learn TensorFlow features in a real-life problem, followed by detailed TensorFlow installation and configuration Explore computation graphs, data, and programming models also get an insight into an example of implementing linear regression model for predictive analytics Solve the Titanic survival problem using logistic regression, random forests, and SVMs for predictive analytics Dig deeper into predictive analytics and find out how to take advantage of it to cluster records belonging to the certain group or class for a dataset of unsupervised observations Learn several examples of how to apply reinforcement learning algorithms for developing predictive models on real-life datasets Who this book is for This book is aimed at developers, data analysts, machine learning practitioners, and deep learning enthusiasts who want to build powerful, robust, and accurate predictive models with the power of TensorFlow. **Machine Learning with R** Brett Lantz 2013-10-25 Written as a tutorial to explore and understand the power of R for machine learning. This practical guide that covers all of the need to know topics in a very systematic way. For each machine learning approach, each step in the process is detailed, from preparing the data for analysis to evaluating the results. These steps will

build the knowledge you need to apply them to your own data science tasks. Intended for those who want to learn how to use R's machine learning capabilities and gain insight from your data. Perhaps you already know a bit about machine learning, but have never used R; or perhaps you know a little R but are new to machine learning. In either case, this book will get you up and running quickly. It would be helpful to have a bit of familiarity with basic programming concepts, but no prior experience is required.

Machine Learning with R Brett Lantz 2019-04-15 Solve real-world data problems with R and machine learning Key Features Third edition of the bestselling, widely acclaimed R machine learning book, updated and improved for R 3.6 and beyond Harness the power of R to build flexible, effective, and transparent machine learning models Learn quickly with a clear, hands-on guide by experienced machine learning teacher and practitioner, Brett Lantz Book Description Machine learning, at its core, is concerned with transforming data into actionable knowledge. R offers a powerful set of machine learning methods to quickly and easily gain insight from your data. *Machine Learning with R, Third Edition* provides a hands-on, readable guide to applying machine learning to real-world problems. Whether you are an experienced R user or new to the language, Brett Lantz teaches you everything you need to uncover key insights, make new predictions, and visualize your findings. This new 3rd edition updates the classic R data science book to R 3.6 with newer and better libraries, advice on ethical and bias issues in machine learning, and an introduction to deep learning. Find powerful new insights in your data; discover machine learning with R. What you will learn Discover the origins of machine

learning and how exactly a computer learns by example Prepare your data for machine learning work with the R programming language Classify important outcomes using nearest neighbor and Bayesian methods Predict future events using decision trees, rules, and support vector machines Forecast numeric data and estimate financial values using regression methods Model complex processes with artificial neural networks – the basis of deep learning Avoid bias in machine learning models Evaluate your models and improve their performance Connect R to SQL databases and emerging big data technologies such as Spark, H2O, and TensorFlow Who this book is for Data scientists, students, and other practitioners who want a clear, accessible guide to machine learning with R.

R: Predictive Analysis 2017

Data Science Using Python and R Chantal D. Larose
2019-04-09 Learn data science by doing data science! Data Science Using Python and R will get you plugged into the world's two most widespread open-source platforms for data science: Python and R. Data science is hot. Bloomberg called data scientist "the hottest job in America." Python and R are the top two open-source data science tools in the world. In Data Science Using Python and R, you will learn step-by-step how to produce hands-on solutions to real-world business problems, using state-of-the-art techniques. Data Science Using Python and R is written for the general reader with no previous analytics or programming experience. An entire chapter is dedicated to learning the basics of Python and R. Then, each chapter presents step-by-step instructions and walkthroughs for solving data science problems using Python and R. Those with analytics experience will appreciate having a one-stop shop for

learning how to do data science using Python and R. Topics covered include data preparation, exploratory data analysis, preparing to model the data, decision trees, model evaluation, misclassification costs, naïve Bayes classification, neural networks, clustering, regression modeling, dimension reduction, and association rules mining. Further, exciting new topics such as random forests and general linear models are also included. The book emphasizes data-driven error costs to enhance profitability, which avoids the common pitfalls that may cost a company millions of dollars. Data Science Using Python and R provides exercises at the end of every chapter, totaling over 500 exercises in the book. Readers will therefore have plenty of opportunity to test their newfound data science skills and expertise. In the Hands-on Analysis exercises, readers are challenged to solve interesting business problems using real-world data sets.

Learning Social Media Analytics with R Raghav Bali
2017-05-26 Tap into the realm of social media and unleash the power of analytics for data-driven insights using R About This Book* A practical guide written to help leverage the power of the R eco-system to extract, process, analyze, visualize and model social media data* Learn about data access, retrieval, cleaning, and curation methods for data originating from various social media platforms.* Visualize and analyze data from social media platforms to understand and model complex relationships using various concepts and techniques such as Sentiment Analysis, Topic Modeling, Text Summarization, Recommendation Systems, Social Network Analysis, Classification, and Clustering. Who This Book Is For It is targeted at IT professionals, Data Scientists, Analysts, Developers, Machine Learning

Enthusiasts, social media marketers and anyone with a keen interest in data, analytics, and generating insights from social data. Some background experience in R would be helpful, but not necessary, since this book is written keeping in mind, that readers can have varying levels of expertise.

What You Will Learn*

- Learn how to tap into data from diverse social media platforms using the R ecosystem*
- Use social media data to formulate and solve real-world problems*
- Analyze user social networks and communities using concepts from graph theory and network analysis*
- Learn to detect opinion and sentiment, extract themes, topics, and trends from unstructured noisy text data from diverse social media channels*
- Understand the art of representing actionable insights with effective visualizations*
- Analyze data from major social media channels such as Twitter, Facebook, Flickr, Foursquare, Github, StackExchange, and so on*
- Learn to leverage popular R packages such as ggplot2, topicmodels, caret, e1071, tm, wordcloud, twittR, Rfacebook, dplyr, reshape2, and many more

In Detail

The Internet has truly become humongous, especially with the rise of various forms of social media in the last decade, which give users a platform to express themselves and also communicate and collaborate with each other. This book will help the reader to understand the current social media landscape and to learn how analytics can be leveraged to derive insights from it. This data can be analyzed to gain valuable insights into the behavior and engagement of users, organizations, businesses, and brands. It will help readers frame business problems and solve them using social data. The book will also cover several practical real-world use cases on social media using R and its advanced packages to utilize data

science methodologies such as sentiment analysis, topic modeling, text summarization, recommendation systems, social network analysis, classification, and clustering. This will enable readers to learn different hands-on approaches to obtain data from diverse social media sources such as Twitter and Facebook. It will also show readers how to establish detailed workflows to process, visualize, and analyze data to transform social data into actionable insights.

Style and approach

This book follows a step-by-step approach with detailed strategies for understanding, extracting, analyzing, visualizing, and modeling data from several major social network platforms such as Facebook, Twitter, Foursquare, Flickr, Github, and StackExchange. The chapters cover several real-world use cases and leverage data science, machine learning, network analysis, and graph theory concepts along with the R ecosystem, including popular packages such as ggplot2, caret, dplyr, topicmodels, tm, and so on.

Hands-On Deep Learning with R Michael Pawlus 2020-04-24

Explore and implement deep learning to solve various real-world problems using modern R libraries such as TensorFlow, MXNet, H2O, and Deepnet

Key Features

- Understand deep learning algorithms and architectures using R and determine which algorithm is best suited for a specific problem
- Improve models using parameter tuning, feature engineering, and ensembling
- Apply advanced neural network models such as deep autoencoders and generative adversarial networks (GANs) across different domains

Book Description

Deep learning enables efficient and accurate learning from a massive amount of data. This book will help you overcome a number of challenges using various deep learning algorithms and architectures with R programming. This

book starts with a brief overview of machine learning and deep learning and how to build your first neural network. You'll understand the architecture of various deep learning algorithms and their applicable fields, learn how to build deep learning models, optimize hyperparameters, and evaluate model performance. Various deep learning applications in image processing, natural language processing (NLP), recommendation systems, and predictive analytics will also be covered. Later chapters will show you how to tackle recognition problems such as image recognition and signal detection, programmatically summarize documents, conduct topic modeling, and forecast stock market prices. Toward the end of the book, you will learn the common applications of GANs and how to build a face generation model using them. Finally, you'll get to grips with using reinforcement learning and deep reinforcement learning to solve various real-world problems. By the end of this deep learning book, you will be able to build and deploy your own deep learning applications using appropriate frameworks and algorithms. What you will learn

Design a feedforward neural network to see how the activation function computes an output
Create an image recognition model using convolutional neural networks (CNNs)
Prepare data, decide hidden layers and neurons and train your model with the backpropagation algorithm
Apply text cleaning techniques to remove uninformative text using NLP
Build, train, and evaluate a GAN model for face generation
Understand the concept and implementation of reinforcement learning in R

Who this book is for
This book is for data scientists, machine learning engineers, and deep learning developers who are familiar with machine learning and are looking to enhance their knowledge of deep learning using practical examples.

Anyone interested in increasing the efficiency of their machine learning applications and exploring various options in R will also find this book useful. Basic knowledge of machine learning techniques and working knowledge of the R programming language is expected.

Hands-On Data Science for Marketing Yoon Hyup Hwang
2019-03-29 Optimize your marketing strategies through analytics and machine learning
Key Features
Understand how data science drives successful marketing campaigns
Use machine learning for better customer engagement, retention, and product recommendations
Extract insights from your data to optimize marketing strategies and increase profitability

Book Description
Regardless of company size, the adoption of data science and machine learning for marketing has been rising in the industry. With this book, you will learn to implement data science techniques to understand the drivers behind the successes and failures of marketing campaigns. This book is a comprehensive guide to help you understand and predict customer behaviors and create more effectively targeted and personalized marketing strategies. This is a practical guide to performing simple-to-advanced tasks, to extract hidden insights from the data and use them to make smart business decisions. You will understand what drives sales and increases customer engagements for your products. You will learn to implement machine learning to forecast which customers are more likely to engage with the products and have high lifetime value. This book will also show you how to use machine learning techniques to understand different customer segments and recommend the right products for each customer. Apart from learning to gain insights into consumer behavior using exploratory analysis, you will

also learn the concept of A/B testing and implement it using Python and R. By the end of this book, you will be experienced enough with various data science and machine learning techniques to run and manage successful marketing campaigns for your business. What you will learn Learn how to compute and visualize marketing KPIs in Python and R Master what drives successful marketing campaigns with data science Use machine learning to predict customer engagement and lifetime value Make product recommendations that customers are most likely to buy Learn how to use A/B testing for better marketing decision making Implement machine learning to understand different customer segments Who this book is for If you are a marketing professional, data scientist, engineer, or a student keen to learn how to apply data science to marketing, this book is what you need! It will be beneficial to have some basic knowledge of either Python or R to work through the examples. This book will also be beneficial for beginners as it covers basic-to-advanced data science concepts and applications in marketing with real-life examples.

SQL Server 2017 Machine Learning Services with R Julie Koesmarno 2018-02-27 Develop and run efficient R scripts and predictive models for SQL Server 2017 Key Features Learn how you can combine the power of R and SQL Server 2017 to build efficient, cost-effective data science solutions Leverage the capabilities of R Services to perform advanced analytics--from data exploration to predictive modeling A quick primer with practical examples to help you get up- and- running with SQL Server 2017 Machine Learning Services with R, as part of database solutions with continuous integration / continuous delivery. Book Description R Services was one of the most anticipated features in SQL Server 2016,

improved significantly and rebranded as SQL Server 2017 Machine Learning Services. Prior to SQL Server 2016, many developers and data scientists were already using R to connect to SQL Server in siloed environments that left a lot to be desired, in order to do additional data analysis, superseding SSAS Data Mining or additional CLR programming functions. With R integrated within SQL Server 2017, these developers and data scientists can now benefit from its integrated, effective, efficient, and more streamlined analytics environment. This book gives you foundational knowledge and insights to help you understand SQL Server 2017 Machine Learning Services with R. First and foremost, the book provides practical examples on how to implement, use, and understand SQL Server and R integration in corporate environments, and also provides explanations and underlying motivations. It covers installing Machine Learning Services; maintaining, deploying, and managing code; and monitoring your services. Delving more deeply into predictive modeling and the RevoScaleR package, this book also provides insights into operationalizing code and exploring and visualizing data. To complete the journey, this book covers the new features in SQL Server 2017 and how they are compatible with R, amplifying their combined power. What you will learn Get an overview of SQL Server 2017 Machine Learning Services with R Manage SQL Server Machine Learning Services from installation to configuration and maintenance Handle and operationalize R code Explore RevoScaleR R algorithms and create predictive models Deploy, manage, and monitor database solutions with R Extend R with SQL Server 2017 features Explore the power of R for database administrators Who this book is for This book is for data analysts, data scientists, and database

administrators with some or no experience in R but who are eager to easily deliver practical data science solutions in their day-to-day work (or future projects) using SQL Server.

Predictive Analytics Using Rattle and Qlik Sense Ferran Garcia Pagans 2015-06-30 Qlik Sense Desktop, the personal and free version of Qlik Sense, is a powerful tool for business analysts to analyze data and create useful data applications. Rattle, developed in R, is a GUI used for data mining and complements Qlik Sense Desktop very well. By combining Rattle and Qlik Sense Desktop, a business user can learn how to apply predictive analytics to create real-world data applications. The objective is to use Qlik Sense to analyze data and complement it with predictive analytics using Rattle. This book will introduce you to basic predictive analysis techniques using Rattle and basic data visualizations concepts using Qlik Sense Desktop. You will start by setting up Qlik Sense Desktop, R, and Rattle and learn the basic of these tools. Then this book will examine the data and make it ready to be analyzed. After that, you will get to know the key concepts of predictive analytics, by building simple models with Rattle and creating visualizations with Qlik Sense Desktop. Finally, the book will show you the basics of data visualization and will help you to create your first data application and dashboard.

Applied Supervised Learning with R Karthik Ramasubramanian 2019-05-31 Learn the ropes of supervised machine learning with R by studying popular real-world use-cases, and understand how it drives object detection in driver less cars, customer churn, and loan default prediction. Key Features Study supervised learning algorithms by using real-world datasets Fine tune

optimal parameters with hyperparameter optimization Select the best algorithm using the model evaluation framework Book Description R provides excellent visualization features that are essential for exploring data before using it in automated learning. Applied Supervised Learning with R helps you cover the complete process of employing R to develop applications using supervised machine learning algorithms for your business needs. The book starts by helping you develop your analytical thinking to create a problem statement using business inputs and domain research. You will then learn different evaluation metrics that compare various algorithms, and later progress to using these metrics to select the best algorithm for your problem. After finalizing the algorithm you want to use, you will study the hyperparameter optimization technique to fine-tune your set of optimal parameters. To prevent you from overfitting your model, a dedicated section will even demonstrate how you can add various regularization terms. By the end of this book, you will have the advanced skills you need for modeling a supervised machine learning algorithm that precisely fulfills your business needs. What you will learn Develop analytical thinking to precisely identify a business problem Wrangle data with dplyr, tidyr, and reshape2 Visualize data with ggplot2 Validate your supervised machine learning model using k-fold Optimize hyperparameters with grid and random search, and Bayesian optimization Deploy your model on Amazon Web Services (AWS) Lambda with plumber Improve your model's performance with feature selection and dimensionality reduction Who this book is for This book is specially designed for novice and intermediate-level data analysts, data scientists, and data engineers who want to explore different methods of

supervised machine learning and its various use cases. Some background in statistics, probability, calculus, linear algebra, and programming will help you thoroughly understand and follow the content of this book.

Data Analysis with R Tony Fischetti 2015-12-22 Load, wrangle, and analyze your data using the world's most powerful statistical programming language About This Book Load, manipulate and analyze data from different sources Gain a deeper understanding of fundamentals of applied statistics A practical guide to performing data analysis in practice Who This Book Is For Whether you are learning data analysis for the first time, or you want to deepen the understanding you already have, this book will prove to an invaluable resource. If you are looking for a book to bring you all the way through the fundamentals to the application of advanced and effective analytics methodologies, and have some prior programming experience and a mathematical background, then this is for you. What You Will Learn Navigate the R environment Describe and visualize the behavior of data and relationships between data Gain a thorough understanding of statistical reasoning and sampling Employ hypothesis tests to draw inferences from your data Learn Bayesian methods for estimating parameters Perform regression to predict continuous variables Apply powerful classification methods to predict categorical data Handle missing data gracefully using multiple imputation Identify and manage problematic data points Employ parallelization and Rcpp to scale your analyses to larger data Put best practices into effect to make your job easier and facilitate reproducibility In Detail Frequently the tool of choice for academics, R has spread deep into the private sector and can be found in the production pipelines at some of the most advanced

and successful enterprises. The power and domain-specificity of R allows the user to express complex analytics easily, quickly, and succinctly. With over 7,000 user contributed packages, it's easy to find support for the latest and greatest algorithms and techniques. Starting with the basics of R and statistical reasoning, *Data Analysis with R* dives into advanced predictive analytics, showing how to apply those techniques to real-world data though with real-world examples. Packed with engaging problems and exercises, this book begins with a review of R and its syntax. From there, get to grips with the fundamentals of applied statistics and build on this knowledge to perform sophisticated and powerful analytics. Solve the difficulties relating to performing data analysis in practice and find solutions to working with "messy data", large data, communicating results, and facilitating reproducibility. This book is engineered to be an invaluable resource through many stages of anyone's career as a data analyst. Style and approach Learn data analysis using engaging examples and fun exercises, and with a gentle and friendly but comprehensive "learn-by-doing" approach.

Practical Data Science with Python Nathan George 2021-09-30 Learn to effectively manage data and execute data science projects from start to finish using Python Key Features Understand and utilize data science tools in Python, such as specialized machine learning algorithms and statistical modeling Build a strong data science foundation with the best data science tools available in Python Add value to yourself, your organization, and society by extracting actionable insights from raw data Book Description *Practical Data Science with Python* teaches you core data science concepts, with real-world

and realistic examples, and strengthens your grip on the basic as well as advanced principles of data preparation and storage, statistics, probability theory, machine learning, and Python programming, helping you build a solid foundation to gain proficiency in data science. The book starts with an overview of basic Python skills and then introduces foundational data science techniques, followed by a thorough explanation of the Python code needed to execute the techniques. You'll understand the code by working through the examples. The code has been broken down into small chunks (a few lines or a function at a time) to enable thorough discussion. As you progress, you will learn how to perform data analysis while exploring the functionalities of key data science Python packages, including pandas, SciPy, and scikit-learn. Finally, the book covers ethics and privacy concerns in data science and suggests resources for improving data science skills, as well as ways to stay up to date on new data science developments. By the end of the book, you should be able to comfortably use Python for basic data science projects and should have the skills to execute the data science process on any data source. What you will learn Use Python data science packages effectively Clean and prepare data for data science work, including feature engineering and feature selection Data modeling, including classic statistical models (such as t-tests), and essential machine learning algorithms, such as random forests and boosted models Evaluate model performance Compare and understand different machine learning methods Interact with Excel spreadsheets through Python Create automated data science reports through Python Get to grips with text analytics techniques Who this book is for The book is intended for beginners, including students starting or about to start

a data science, analytics, or related program (e.g. Bachelor's, Master's, bootcamp, online courses), recent college graduates who want to learn new skills to set them apart in the job market, professionals who want to learn hands-on data science techniques in Python, and those who want to shift their career to data science. The book requires basic familiarity with Python. A "getting started with Python" section has been included to get complete novices up to speed.

Data Analysis with Python David Taieb 2018-12-31 Learn a modern approach to data analysis using Python to harness the power of programming and AI across your data. Detailed case studies bring this modern approach to life across visual data, social media, graph algorithms, and time series analysis. Key Features Bridge your data analysis with the power of programming, complex algorithms, and AI Use Python and its extensive libraries to power your way to new levels of data insight Work with AI algorithms, TensorFlow, graph algorithms, NLP, and financial time series Explore this modern approach across with key industry case studies and hands-on projects Book Description Data Analysis with Python offers a modern approach to data analysis so that you can work with the latest and most powerful Python tools, AI techniques, and open source libraries. Industry expert David Taieb shows you how to bridge data science with the power of programming and algorithms in Python. You'll be working with complex algorithms, and cutting-edge AI in your data analysis. Learn how to analyze data with hands-on examples using Python-based tools and Jupyter Notebook. You'll find the right balance of theory and practice, with extensive code files that you can integrate right into your own data projects. Explore the power of this approach to data analysis by then working with it across

key industry case studies. Four fascinating and full projects connect you to the most critical data analysis challenges you're likely to meet in today. The first of these is an image recognition application with TensorFlow – embracing the importance today of AI in your data analysis. The second industry project analyses social media trends, exploring big data issues and AI approaches to natural language processing. The third case study is a financial portfolio analysis application that engages you with time series analysis - pivotal to many data science applications today. The fourth industry use case dives you into graph algorithms and the power of programming in modern data science. You'll wrap up with a thoughtful look at the future of data science and how it will harness the power of algorithms and artificial intelligence. What you will learn

A new toolset that has been carefully crafted to meet for your data analysis challenges

Full and detailed case studies of the toolset across several of today's key industry contexts

Become super productive with a new toolset across Python and Jupyter Notebook

Look into the future of data science and which directions to develop your skills next

Who this book is for

This book is for developers wanting to bridge the gap between them and data scientists. Introducing PixieDust from its creator, the book is a great desk companion for the accomplished Data Scientist. Some fluency in data interpretation and visualization is assumed. It will be helpful to have some knowledge of Python, using Python libraries, and some proficiency in web development.

Machine Learning with R Cookbook Yu-Wei, Chiu (David Chiu) 2015-03-26 The R language is a powerful open source functional programming language. At its core, R is a statistical programming language that provides

impressive tools to analyze data and create high-level graphics. This book covers the basics of R by setting up a user-friendly programming environment and performing data ETL in R. Data exploration examples are provided that demonstrate how powerful data visualization and machine learning is in discovering hidden relationships. You will then dive into important machine learning topics, including data classification, regression, clustering, association rule mining, and dimension reduction.

R for Data Science Dan Toomey 2014-12-24 If you are a data analyst who has a firm grip on some advanced data analysis techniques and wants to learn how to leverage the features of R, this is the book for you. You should have some basic knowledge of the R language and should know about some data science topics.

Learning Predictive Analytics with Python Ashish Kumar 2016-02-15 Gain practical insights into predictive modelling by implementing Predictive Analytics algorithms on public datasets with Python

About This Book

A step-by-step guide to predictive modeling including lots of tips, tricks, and best practices

Get to grips with the basics of Predictive Analytics with Python

Learn how to use the popular predictive modeling algorithms such as Linear Regression, Decision Trees, Logistic Regression, and Clustering

Who This Book Is For

If you wish to learn how to implement Predictive Analytics algorithms using Python libraries, then this is the book for you. If you are familiar with coding in Python (or some other programming/statistical/scripting language) but have never used or read about Predictive Analytics algorithms, this book will also help you. The book will be beneficial to and can be read by any Data Science enthusiasts. Some familiarity with Python will

be useful to get the most out of this book, but it is certainly not a prerequisite. What You Will Learn Understand the statistical and mathematical concepts behind Predictive Analytics algorithms and implement Predictive Analytics algorithms using Python libraries Analyze the result parameters arising from the implementation of Predictive Analytics algorithms Write Python modules/functions from scratch to execute segments or the whole of these algorithms Recognize and mitigate various contingencies and issues related to the implementation of Predictive Analytics algorithms Get to know various methods of importing, cleaning, sub-setting, merging, joining, concatenating, exploring, grouping, and plotting data with pandas and numpy Create dummy datasets and simple mathematical simulations using the Python numpy and pandas libraries Understand the best practices while handling datasets in Python and creating predictive models out of them In Detail Social Media and the Internet of Things have resulted in an avalanche of data. Data is powerful but not in its raw form - It needs to be processed and modeled, and Python is one of the most robust tools out there to do so. It has an array of packages for predictive modeling and a suite of IDEs to choose from. Learning to predict who would win, lose, buy, lie, or die with Python is an indispensable skill set to have in this data age. This book is your guide to getting started with Predictive Analytics using Python. You will see how to process data and make predictive models from it. We balance both statistical and mathematical concepts, and implement them in Python using libraries such as pandas, scikit-learn, and numpy. You'll start by getting an understanding of the basics of predictive modeling, then you will see how to cleanse your data of impurities and

get it ready it for predictive modeling. You will also learn more about the best predictive modeling algorithms such as Linear Regression, Decision Trees, and Logistic Regression. Finally, you will see the best practices in predictive modeling, as well as the different applications of predictive modeling in the modern world. Style and approach All the concepts in this book been explained and illustrated using a dataset, and in a step-by-step manner. The Python code snippet to implement a method or concept is followed by the output, such as charts, dataset heads, pictures, and so on. The statistical concepts are explained in detail wherever required.

R Machine Learning By Example Raghav Bali 2016-03-31 Understand the fundamentals of machine learning with R and build your own dynamic algorithms to tackle complicated real-world problems successfully About This Book Get to grips with the concepts of machine learning through exciting real-world examples Visualize and solve complex problems by using power-packed R constructs and its robust packages for machine learning Learn to build your own machine learning system with this example-based practical guide Who This Book Is For If you are interested in mining useful information from data using state-of-the-art techniques to make data-driven decisions, this is a go-to guide for you. No prior experience with data science is required, although basic knowledge of R is highly desirable. Prior knowledge in machine learning would be helpful but is not necessary. What You Will Learn Utilize the power of R to handle data extraction, manipulation, and exploration techniques Use R to visualize data spread across multiple dimensions and extract useful features Explore the underlying mathematical and logical concepts that

drive machine learning algorithms Dive deep into the world of analytics to predict situations correctly Implement R machine learning algorithms from scratch and be amazed to see the algorithms in action Write reusable code and build complete machine learning systems from the ground up Solve interesting real-world problems using machine learning and R as the journey unfolds Harness the power of robust and optimized R packages to work on projects that solve real-world problems in machine learning and data science In Detail Data science and machine learning are some of the top buzzwords in the technical world today. From retail stores to Fortune 500 companies, everyone is working hard to making machine learning give them data-driven insights to grow their business. With powerful data manipulation features, machine learning packages, and an active developer community, R empowers users to build sophisticated machine learning systems to solve real-world data problems. This book takes you on a data-driven journey that starts with the very basics of R and machine learning and gradually builds upon the concepts to work on projects that tackle real-world problems. You'll begin by getting an understanding of the core concepts and definitions required to appreciate machine learning algorithms and concepts. Building upon the basics, you will then work on three different projects to apply the concepts of machine learning, following current trends and cover major algorithms as well as popular R packages in detail. These projects have been neatly divided into six different chapters covering the worlds of e-commerce, finance, and social-media, which are at the very core of this data-driven revolution. Each of the projects will help you to understand, explore, visualize, and derive insights depending upon

the domain and algorithms. Through this book, you will learn to apply the concepts of machine learning to deal with data-related problems and solve them using the powerful yet simple language, R. Style and approach The book is an enticing journey that starts from the very basics to gradually pick up pace as the story unfolds. Each concept is first defined in the larger context of things succinctly, followed by a detailed explanation of their application. Each topic is explained with the help of a project that solves a real real-world problem involving hands-on work thus giving you a deep insight into the world of machine learning.

Hands-On Predictive Analytics with Python Alvaro Fuentes 2018-12-28 Step-by-step guide to build high performing predictive applications Key Features Use the Python data analytics ecosystem to implement end-to-end predictive analytics projects Explore advanced predictive modeling algorithms with an emphasis on theory with intuitive explanations Learn to deploy a predictive model's results as an interactive application Book Description Predictive analytics is an applied field that employs a variety of quantitative methods using data to make predictions. It involves much more than just throwing data onto a computer to build a model. This book provides practical coverage to help you understand the most important concepts of predictive analytics. Using practical, step-by-step examples, we build predictive analytics solutions while using cutting-edge Python tools and packages. The book's step-by-step approach starts by defining the problem and moves on to identifying relevant data. We will also be performing data preparation, exploring and visualizing relationships, building models, tuning, evaluating, and deploying model. Each stage has relevant practical examples and

efficient Python code. You will work with models such as KNN, Random Forests, and neural networks using the most important libraries in Python's data science stack: NumPy, Pandas, Matplotlib, Seaborn, Keras, Dash, and so on. In addition to hands-on code examples, you will find intuitive explanations of the inner workings of the main techniques and algorithms used in predictive analytics. By the end of this book, you will be all set to build high-performance predictive analytics solutions using Python programming. What you will learn

Get to grips with the main concepts and principles of predictive analytics

Learn about the stages involved in producing complete predictive analytics solutions

Understand how to define a problem, propose a solution, and prepare a dataset

Use visualizations to explore relationships and gain insights into the dataset

Learn to build regression and classification models using scikit-learn

Use Keras to build powerful neural network models that produce accurate predictions

Learn to serve a model's predictions as a web application

Who this book is for This book is for data analysts, data scientists, data engineers, and Python developers who want to learn about predictive modeling and would like to implement predictive analytics solutions using Python's data stack. People from other backgrounds who would like to enter this exciting field will greatly benefit from reading this book. All you need is to be proficient in Python programming and have a basic understanding of statistics and college-level algebra.

Practical Predictive Analytics Ralph Winters 2017-06-30

Make sense of your data and predict the unpredictable

About This Book A unique book that centers around develop six key practical skills needed to develop and implement predictive analytics

Apply the principles and

techniques of predictive analytics to effectively interpret big data

Solve real-world analytical problems with the help of practical case studies and real-world scenarios taken from the world of healthcare, marketing, and other business domains

Who This Book Is For This book is for those with a mathematical/statistics background who wish to understand the concepts, techniques, and implementation of predictive analytics to resolve complex analytical issues.

Basic familiarity with a programming language of R is expected.

What You Will Learn

Master the core predictive analytics algorithm which are used today in business

Learn to implement the six steps for a successful analytics project

Classify the right algorithm for your requirements

Use and apply predictive analytics to research problems in healthcare

Implement predictive analytics to retain and acquire your customers

Use text mining to understand unstructured data

Develop models on your own PC or in Spark/Hadoop environments

Implement predictive analytics products for customers

In Detail

This is the go-to book for anyone interested in the steps needed to develop predictive analytics solutions with examples from the world of marketing, healthcare, and retail. We'll get started with a brief history of predictive analytics and learn about different roles and functions people play within a predictive analytics project. Then, we will learn about various ways of installing R along with their pros and cons, combined with a step-by-step installation of RStudio, and a description of the best practices for organizing your projects. On completing the installation, we will begin to acquire the skills necessary to input, clean, and prepare your data for modeling. We will learn the six specific steps needed to implement and successfully

deploy a predictive model starting from asking the right questions through model development and ending with deploying your predictive model into production. We will learn why collaboration is important and how agile iterative modeling cycles can increase your chances of developing and deploying the best successful model. We will continue your journey in the cloud by extending your skill set by learning about Databricks and SparkR, which allow you to develop predictive models on vast gigabytes of data. Style and Approach This book takes a practical hands-on approach wherein the algorithms will be explained with the help of real-world use cases. It is written in a well-researched academic style which is a great mix of theoretical and practical information. Code examples are supplied for both theoretical concepts as well as for the case studies. Key references and summaries will be provided at the end of each chapter so that you can explore those topics on their own.

Healthcare Analytics Made Simple Vikas (Vik) Kumar
2018-07-31 Add a touch of data analytics to your healthcare systems and get insightful outcomes
Key Features Perform healthcare analytics with Python and SQL Build predictive models on real healthcare data with pandas and scikit-learn Use analytics to improve healthcare performance
Book Description In recent years, machine learning technologies and analytics have been widely utilized across the healthcare sector. Healthcare Analytics Made Simple bridges the gap between practising doctors and data scientists. It equips the data scientists' work with healthcare data and allows them to gain better insight from this data in order to improve healthcare outcomes. This book is a complete overview of machine learning for healthcare analytics, briefly describing the current healthcare landscape, machine

learning algorithms, and Python and SQL programming languages. The step-by-step instructions teach you how to obtain real healthcare data and perform descriptive, predictive, and prescriptive analytics using popular Python packages such as pandas and scikit-learn. The latest research results in disease detection and healthcare image analysis are reviewed. By the end of this book, you will understand how to use Python for healthcare data analysis, how to import, collect, clean, and refine data from electronic health record (EHR) surveys, and how to make predictive models with this data through real-world algorithms and code examples. What you will learn Gain valuable insight into healthcare incentives, finances, and legislation Discover the connection between machine learning and healthcare processes Use SQL and Python to analyze data Measure healthcare quality and provider performance Identify features and attributes to build successful healthcare models Build predictive models using real-world healthcare data Become an expert in predictive modeling with structured clinical data See what lies ahead for healthcare analytics Who this book is for Healthcare Analytics Made Simple is for you if you are a developer who has a working knowledge of Python or a related programming language, although you are new to healthcare or predictive modeling with healthcare data. Clinicians interested in analytics and healthcare computing will also benefit from this book. This book can also serve as a textbook for students enrolled in an introductory course on machine learning for healthcare.
Data Analysis with R, Second Edition Anthony Fischetti
2018-03-28 Learn, by example, the fundamentals of data analysis as well as several intermediate to advanced methods and techniques ranging from classification and

regression to Bayesian methods and MCMC, which can be put to immediate use. Key Features Analyze your data using R – the most powerful statistical programming language Learn how to implement applied statistics using practical use-cases Use popular R packages to work with unstructured and structured data Book Description Frequently the tool of choice for academics, R has spread deep into the private sector and can be found in the production pipelines at some of the most advanced and successful enterprises. The power and domain-specificity of R allows the user to express complex analytics easily, quickly, and succinctly. Starting with the basics of R and statistical reasoning, this book dives into advanced predictive analytics, showing how to apply those techniques to real-world data though with real-world examples. Packed with engaging problems and exercises, this book begins with a review of R and its syntax with packages like Rcpp, ggplot2, and dplyr. From there, get to grips with the fundamentals of applied statistics and build on this knowledge to perform sophisticated and powerful analytics. Solve the difficulties relating to performing data analysis in practice and find solutions to working with messy data, large data, communicating results, and facilitating reproducibility. This book is engineered to be an invaluable resource through many stages of anyone's career as a data analyst. What you will learn Gain a thorough understanding of statistical reasoning and sampling theory Employ hypothesis testing to draw inferences from your data Learn Bayesian methods for estimating parameters Train regression, classification, and time series models Handle missing data gracefully using multiple imputation Identify and manage problematic data points Learn how to scale your analyses

to larger data with Rcpp, data.table, dplyr, and parallelization Put best practices into effect to make your job easier and facilitate reproducibility Who this book is for Budding data scientists and data analysts who are new to the concept of data analysis, or who want to build efficient analytical models in R will find this book to be useful. No prior exposure to data analysis is needed, although a fundamental understanding of the R programming language is required to get the best out of this book.

Learning Predictive Analytics with R Eric Mayor
2015-09-24 Get to grips with key data visualization and predictive analytic skills using R About This Book • Acquire predictive analytic skills using various tools of R • Make predictions about future events by discovering valuable information from data using R • Comprehensible guidelines that focus on predictive model design with real-world data Who This Book Is For If you are a statistician, chief information officer, data scientist, ML engineer, ML practitioner, quantitative analyst, and student of machine learning, this is the book for you. You should have basic knowledge of the use of R. Readers without previous experience of programming in R will also be able to use the tools in the book. What You Will Learn • Customize R by installing and loading new packages • Explore the structure of data using clustering algorithms • Turn unstructured text into ordered data, and acquire knowledge from the data • Classify your observations using Naive Bayes, k-NN, and decision trees • Reduce the dimensionality of your data using principal component analysis • Discover association rules using Apriori • Understand how statistical distributions can help retrieve information from data using correlations, linear regression, and multilevel

regression• Use PMML to deploy the models generated in R
In DetailR is statistical software that is used for data analysis. There are two main types of learning from data: unsupervised learning, where the structure of data is extracted automatically; and supervised learning, where a labeled part of the data is used to learn the relationship or scores in a target attribute. As important information is often hidden in a lot of data, R helps to extract that information with its many standard and cutting-edge statistical functions. This book is packed with easy-to-follow guidelines that explain the workings of the many key data mining tools of R, which are used to discover knowledge from your data. You will learn how to perform key predictive analytics tasks using R, such as train and test predictive models for classification and regression tasks, score new data sets and so on. All chapters will guide you in acquiring the skills in a practical way.

Most chapters also include a theoretical introduction that will sharpen your understanding of the subject matter and invite you to go further. The book familiarizes you with the most common data mining tools of R, such as k-means, hierarchical regression, linear regression, association rules, principal component analysis, multilevel modeling, k-NN, Naive Bayes, decision trees, and text mining. It also provides a description of visualization techniques using the basic visualization tools of R as well as lattice for visualizing patterns in data organized in groups. This book is invaluable for anyone fascinated by the data mining opportunities offered by GNU R and its packages. Style and approach This is a practical book, which analyzes compelling data about life, health, and death with the help of tutorials. It offers you a useful way of interpreting the data that's specific to this book, but that can also be applied to any other data.