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KEY=STRUCTURES - ALICIA GREGORY

DATA STRUCTURES AND ALGORITHMS USING PYTHON

PYTHON FOR DATA ANALYSIS

DATA WRANGLING WITH PANDAS, NUMPY, AND IPYTHON

"O'Reilly Media, Inc." Get complete instructions for manipulating, processing, cleaning, and crunching datasets in Python. Updated for Python 3.6, the second edition of this hands-on guide is packed with practical case studies that show you how to solve a broad set of data analysis problems effectively. You'll learn the latest versions of pandas, NumPy, IPython, and Jupyter in the process. Written by Wes McKinney, the creator of the Python pandas project, this book is a practical, modern introduction to data science tools in Python. It's ideal for analysts new to Python and for Python programmers new to data science and scientific computing. Data files and related material are available on GitHub. Use the IPython shell and Jupyter notebook for exploratory computing Learn basic and advanced features in NumPy (Numerical Python) Get started with data analysis tools in the pandas library Use flexible tools to load, clean, transform, merge, and reshape data Create informative visualizations with matplotlib Apply the pandas groupby facility to slice, dice, and summarize datasets Analyze and manipulate regular and irregular time series data Learn how to solve real-world data analysis problems with thorough, detailed examples

DATA STRUCTURES IN ACTION ILLUSTRATED (PYTHON) PDF

A DATA STRUCTURES POCKET BOOK

LaVivienPost.com Data structures in action illustrated Python book uses vivid

visual language to explain data structures, how they work, and when to use what. The book helps you understand the data structures inside and out, and use them efficiently in your projects. It can be read for reference and entertainment. This book covers 8 major data structures, arrays, linked lists, stacks, binary trees, hash tables, graphs among others. The code is written in Python. The book is in PDF format. You can print it on paper or read on any devices that have Adobe reader installed. Get the book today and enjoy the ride!

DATA STRUCTURES

PediaPress

DESIGNING MACHINE LEARNING SYSTEMS WITH PYTHON

Packt Publishing Ltd Design efficient machine learning systems that give you more accurate results About This Book Gain an understanding of the machine learning design process Optimize machine learning systems for improved accuracy Understand common programming tools and techniques for machine learning Develop techniques and strategies for dealing with large amounts of data from a variety of sources Build models to solve unique tasks Who This Book Is For This book is for data scientists, scientists, or just the curious. To get the most out of this book, you will need to know some linear algebra and some Python, and have a basic knowledge of machine learning concepts. What You Will Learn Gain an understanding of the machine learning design process Optimize the error function of your machine learning system Understand the common programming patterns used in machine learning Discover optimizing techniques that will help you get the most from your data Find out how to design models uniquely suited to your task In Detail Machine learning is one of the fastest growing trends in modern computing. It has applications in a wide range of fields, including economics, the natural sciences, web development, and business modeling. In order to harness the power of these systems, it is essential that the practitioner develops a solid understanding of the underlying design principles. There are many reasons why machine learning models may not give accurate results. By looking at these systems from a design perspective, we gain a deeper understanding of the underlying algorithms and the optimisational methods that are available. This book will give you a solid foundation in the machine learning design process, and enable you to build customised machine learning models to solve unique problems. You may already know about, or have worked with, some of the off-the-shelf machine learning models for solving common problems such as spam detection or movie classification, but to begin solving more complex problems, it is important to adapt these models to your own specific needs. This book will give you this understanding and more. Style and approach This easy-to-follow, step-by-step guide covers the most important machine learning models and techniques from a design perspective.

PYTHON: DEEPER INSIGHTS INTO MACHINE LEARNING

Packt Publishing Ltd Leverage benefits of machine learning techniques using Python About This Book Improve and optimise machine learning systems using

effective strategies. Develop a strategy to deal with a large amount of data. Use of Python code for implementing a range of machine learning algorithms and techniques. Who This Book Is For This title is for data scientist and researchers who are already into the field of data science and want to see machine learning in action and explore its real-world application. Prior knowledge of Python programming and mathematics is must with basic knowledge of machine learning concepts. What You Will Learn Learn to write clean and elegant Python code that will optimize the strength of your algorithms Uncover hidden patterns and structures in data with clustering Improve accuracy and consistency of results using powerful feature engineering techniques Gain practical and theoretical understanding of cutting-edge deep learning algorithms Solve unique tasks by building models Get grips on the machine learning design process In Detail Machine learning and predictive analytics are becoming one of the key strategies for unlocking growth in a challenging contemporary marketplace. It is one of the fastest growing trends in modern computing, and everyone wants to get into the field of machine learning. In order to obtain sufficient recognition in this field, one must be able to understand and design a machine learning system that serves the needs of a project. The idea is to prepare a learning path that will help you to tackle the real-world complexities of modern machine learning with innovative and cutting-edge techniques. Also, it will give you a solid foundation in the machine learning design process, and enable you to build customized machine learning models to solve unique problems. The course begins with getting your Python fundamentals nailed down. It focuses on answering the right questions that cove a wide range of powerful Python libraries, including scikit-learn Theano and Keras.After getting familiar with Python core concepts, it's time to dive into the field of data science. You will further gain a solid foundation on the machine learning design and also learn to customize models for solving problems. At a later stage, you will get a grip on more advanced techniques and acquire a broad set of powerful skills in the area of feature selection and feature engineering. Style and approach This course includes all the resources that will help you jump into the data science field with Python. The aim is to walk through the elements of Python covering powerful machine learning libraries. This course will explain important machine learning models in a step-by-step manner. Each topic is well explained with real-world applications with detailed guidance.Through this comprehensive guide, you will be able to explore machine learning techniques.

FLUENT PYTHON

"O'Reilly Media, Inc." Don't waste time bending Python to fit patterns you've learned in other languages. Python's simplicity lets you become productive quickly, but often this means you aren't using everything the language has to offer. With the updated edition of this hands-on guide, you'll learn how to write effective, modern Python 3 code by leveraging its best ideas. Discover and apply idiomatic Python 3 features beyond your past experience. Author Luciano Ramalho guides you through Python's core language features and libraries and teaches you how to make your code shorter, faster, and more readable. Complete with major updates throughout, this new edition features five parts that work as five short books within the book:

Data structures: Sequences, dicts, sets, Unicode, and data classes
 Functions as objects: First-class functions, related design patterns, and type hints in function declarations
 Object-oriented idioms: Composition, inheritance, mixins, interfaces, operator overloading, protocols, and more static types
 Control flow: Context managers, generators, coroutines, async/await, and thread/process pools
 Metaprogramming: Properties, attribute descriptors, class decorators, and new class metaprogramming hooks that replace or simplify metaclasses

PROBLEM SOLVING WITH ALGORITHMS AND DATA STRUCTURES USING PYTHON

Franklin Beedle & Assoc THIS TEXTBOOK is about computer science. It is also about Python. However, there is much more. The study of algorithms and data structures is central to understanding what computer science is all about. Learning computer science is not unlike learning any other type of difficult subject matter. The only way to be successful is through deliberate and incremental exposure to the fundamental ideas. A beginning computer scientist needs practice so that there is a thorough understanding before continuing on to the more complex parts of the curriculum. In addition, a beginner needs to be given the opportunity to be successful and gain confidence. This textbook is designed to serve as a text for a first course on data structures and algorithms, typically taught as the second course in the computer science curriculum. Even though the second course is considered more advanced than the first course, this book assumes you are beginners at this level. You may still be struggling with some of the basic ideas and skills from a first computer science course and yet be ready to further explore the discipline and continue to practice problem solving. We cover abstract data types and data structures, writing algorithms, and solving problems. We look at a number of data structures and solve classic problems that arise. The tools and techniques that you learn here will be applied over and over as you continue your study of computer science.

OPEN DATA STRUCTURES

AN INTRODUCTION

Athabasca University Press This textbook teaches introductory data structures.

AUTOMATE THE BORING STUFF WITH PYTHON

PRACTICAL PROGRAMMING FOR TOTAL BEGINNERS

No Starch Press If you've ever spent hours renaming files or updating hundreds of spreadsheet cells, you know how tedious tasks like these can be. But what if you could have your computer do them for you? In Automate the Boring Stuff with Python, you'll learn how to use Python to write programs that do in minutes what would take you hours to do by hand—no prior programming experience required. Once you've mastered the basics of programming, you'll create Python programs that effortlessly perform useful and impressive feats of automation to: -Search for

text in a file or across multiple files –Create, update, move, and rename files and folders –Search the Web and download online content –Update and format data in Excel spreadsheets of any size –Split, merge, watermark, and encrypt PDFs –Send reminder emails and text notifications –Fill out online forms Step-by-step instructions walk you through each program, and practice projects at the end of each chapter challenge you to improve those programs and use your newfound skills to automate similar tasks. Don't spend your time doing work a well-trained monkey could do. Even if you've never written a line of code, you can make your computer do the grunt work. Learn how in Automate the Boring Stuff with Python. Note: The programs in this book are written to run on Python 3.

EG-ICE 2021 WORKSHOP ON INTELLIGENT COMPUTING IN ENGINEERING

Universitätsverlag der TU Berlin The 28th EG-ICE International Workshop 2021 brings together international experts working at the interface between advanced computing and modern engineering challenges. Many engineering tasks require open-world resolutions to support multi-actor collaboration, coping with approximate models, providing effective engineer-computer interaction, search in multi-dimensional solution spaces, accommodating uncertainty, including specialist domain knowledge, performing sensor-data interpretation and dealing with incomplete knowledge. While results from computer science provide much initial support for resolution, adaptation is unavoidable and most importantly, feedback from addressing engineering challenges drives fundamental computer-science research. Competence and knowledge transfer goes both ways. Der 28. Internationale EG-ICE Workshop 2021 bringt internationale Experten zusammen, die an der Schnittstelle zwischen fortgeschrittener Datenverarbeitung und modernen technischen Herausforderungen arbeiten. Viele ingenieurwissenschaftliche Aufgaben erfordern Open-World-Resolutionen, um die Zusammenarbeit mehrerer Akteure zu unterstützen, mit approximativen Modellen umzugehen, eine effektive Interaktion zwischen Ingenieur und Computer zu ermöglichen, in mehrdimensionalen Lösungsräumen zu suchen, Unsicherheiten zu berücksichtigen, einschließlich fachspezifischen Domänenwissens, Sensordateninterpretation durchzuführen und mit unvollständigem Wissen umzugehen. Während die Ergebnisse aus der Informatik anfänglich viel Unterstützung für die Lösung bieten, ist eine Anpassung unvermeidlich, und am wichtigsten ist, dass das Feedback aus der Bewältigung technischer Herausforderungen die computer-wissenschaftliche Grundlagenforschung vorantreibt. Kompetenz und Wissenstransfer gehen in beide Richtungen.

MACROECONOMIC EFFECTS OF MARKET STRUCTURE DISTORTIONS: EVIDENCE FROM FRENCH CARTELS

International Monetary Fund We provide systematic evidence on cartels' characteristics, using novel data on cases investigated by the French Competition Authority. These practices are widely spread across sectors and cartel members are typically among the top firms in their industries. In a model with heterogeneous firms

and collusion, cartels amplify misallocation by charging supracompetitive markups. Breaking down French cartels would increase aggregate productivity by 2%, welfare by 3.5%, bringing the economy 37% closer to the efficient frontier. These numbers shed light on the aggregate importance of collusion.

HANDS-ON DATA STRUCTURES AND ALGORITHMS WITH PYTHON

WRITE COMPLEX AND POWERFUL CODE USING THE LATEST FEATURES OF PYTHON 3.7, 2ND EDITION

Packt Publishing Ltd Learn to implement complex data structures and algorithms using Python Key Features Understand the analysis and design of fundamental Python data structures Explore advanced Python concepts such as Big O notation and dynamic programming Learn functional and reactive implementations of traditional data structures Book Description Data structures allow you to store and organize data efficiently. They are critical to any problem, provide a complete solution, and act like reusable code. Hands-On Data Structures and Algorithms with Python teaches you the essential Python data structures and the most common algorithms for building easy and maintainable applications. This book helps you to understand the power of linked lists, double linked lists, and circular linked lists. You will learn to create complex data structures, such as graphs, stacks, and queues. As you make your way through the chapters, you will explore the application of binary searches and binary search trees, along with learning common techniques and structures used in tasks such as preprocessing, modeling, and transforming data. In the concluding chapters, you will get to grips with organizing your code in a manageable, consistent, and extendable way. You will also study how to bubble sort, selection sort, insertion sort, and merge sort algorithms in detail. By the end of the book, you will have learned how to build components that are easy to understand, debug, and use in different applications. You will get insights into Python implementation of all the important and relevant algorithms. What you will learn Understand object representation, attribute binding, and data encapsulation Gain a solid understanding of Python data structures using algorithms Study algorithms using examples with pictorial representation Learn complex algorithms through easy explanation, implementing Python Build sophisticated and efficient data applications in Python Understand common programming algorithms used in Python data science Write efficient and robust code in Python 3.7 Who this book is for This book is for developers who want to learn data structures and algorithms in Python to write complex and flexible programs. Basic Python programming knowledge is expected.

DATA WRANGLING WITH PYTHON

TIPS AND TOOLS TO MAKE YOUR LIFE EASIER

"O'Reilly Media, Inc." How do you take your data analysis skills beyond Excel to the next level? By learning just enough Python to get stuff done. This hands-on guide shows non-programmers like you how to process information that's initially too messy or difficult to access. You don't need to know a thing about the Python programming language to get started. Through various step-by-step exercises, you'll

learn how to acquire, clean, analyze, and present data efficiently. You'll also discover how to automate your data process, schedule file- editing and clean-up tasks, process larger datasets, and create compelling stories with data you obtain. Quickly learn basic Python syntax, data types, and language concepts Work with both machine-readable and human-consumable data Scrape websites and APIs to find a bounty of useful information Clean and format data to eliminate duplicates and errors in your datasets Learn when to standardize data and when to test and script data cleanup Explore and analyze your datasets with new Python libraries and techniques Use Python solutions to automate your entire data-wrangling process

PRACTICAL PYTHON DATA WRANGLING AND DATA QUALITY

"O'Reilly Media, Inc." There are awesome discoveries to be made and valuable stories to be told in datasets--and this book will help you uncover them. Whether you already work with data or just want to understand its possibilities, the techniques and advice in this practical book will help you learn how to better clean, evaluate, and analyze data to generate meaningful insights and compelling visualizations. Through foundational concepts and worked examples, author Susan McGregor provides the concepts and tools you need to evaluate and analyze all kinds of data and communicate your findings effectively. This book provides a methodical, jargon-free way for practitioners of all levels to harness the power of data. Use Python 3.8+ to read, write, and transform data from a variety of sources Understand and use programming basics in Python to wrangle data at scale Organize, document, and structure your code using best practices Complete exercises either on your own machine or on the web Collect data from structured data files, web pages, and APIs Perform basic statistical analysis to make meaning from data sets Visualize and present data in clear and compelling ways.

CHEMOINFORMATICS APPROACHES TO STRUCTURE- AND LIGAND-BASED DRUG DESIGN, VOLUME II

Frontiers Media SA

SOFTWARE DESIGN, ARCHITECTURE AND ENGINEERING

CONCEPTS AND PRACTICE

PHI Learning Pvt. Ltd. This textbook aims to prepare students, as well as, practitioners for software design and production. Keeping in mind theory and practice, the book keeps a balance between theoretical foundations and practical considerations. The book by and large meets the requirements of students at all levels of computer science and engineering/information technology for their Software design and Software engineering courses. The book begins with concepts of data and object. This helps in exploring the rationale that guide high level programming language (HLL) design and object oriented frameworks. Once past this post, the book moves on to expand on software design concerns. The book emphasizes the centrality of Parnas's separation of concerns in evolving software designs and architecture. The book extensively explores modelling frameworks such

as Unified Modelling Language (UML) and Petri net based methods. Next, the book covers architectural principles and software engineering practices such as Agile – emphasizing software testing during development. It winds up with case studies demonstrating how systems evolve from basic concepts to final products for quality software designs. **TARGET AUDIENCE** • Undergraduate/postgraduate students of Computer Science and Engineering, and Information Technology • Postgraduate students of Software Engineering/Software Systems

GEOSPATIAL TECHNOLOGY

APPLICATION IN WATER RESOURCES MANAGEMENT

Springer Nature This book aims to exchange and share the experiences and research results on the geospatial technology applied in water resources management. It will present the most recent innovations, trends, challenges encountered and the solutions adopted in the area of geospatial technology. It will be beneficial for academicians, scientists, meteorologists, and consultants working in the field of water resources management.

THE ARCHITECTURE OF OPEN SOURCE APPLICATIONS, VOLUME II

Lulu.com

DATA STRUCTURES AND ALGORITHMS IN PYTHON

Wiley Global Education Based on the authors' market leading data structures books in Java and C++, this textbook offers a comprehensive, definitive introduction to data structures in Python by authoritative authors. Data Structures and Algorithms in Python is the first authoritative object-oriented book available for the Python data structures course. Designed to provide a comprehensive introduction to data structures and algorithms, including their design, analysis, and implementation, the text will maintain the same general structure as Data Structures and Algorithms in Java and Data Structures and Algorithms in C++.

INTRODUCTION TO DATA SCIENCE FOR SOCIAL AND POLICY RESEARCH

Cambridge University Press This comprehensive guide provides a step-by-step approach to data collection, cleaning, formatting, and storage, using Python and R.

MARKETING DATA SCIENCE

MODELING TECHNIQUES IN PREDICTIVE ANALYTICS WITH R AND PYTHON

FT Press Now, a leader of Northwestern University's prestigious analytics program presents a fully-integrated treatment of both the business and academic elements of marketing applications in predictive analytics. Writing for both managers and students, Thomas W. Miller explains essential concepts, principles, and theory in the context of real-world applications. Building on Miller's pioneering program, Marketing

Data Science thoroughly addresses segmentation, target marketing, brand and product positioning, new product development, choice modeling, recommender systems, pricing research, retail site selection, demand estimation, sales forecasting, customer retention, and lifetime value analysis. Starting where Miller's widely-praised *Modeling Techniques in Predictive Analytics* left off, he integrates crucial information and insights that were previously segregated in texts on web analytics, network science, information technology, and programming. Coverage includes: The role of analytics in delivering effective messages on the web Understanding the web by understanding its hidden structures Being recognized on the web – and watching your own competitors Visualizing networks and understanding communities within them Measuring sentiment and making recommendations Leveraging key data science methods: databases/data preparation, classical/Bayesian statistics, regression/classification, machine learning, and text analytics Six complete case studies address exceptionally relevant issues such as: separating legitimate email from spam; identifying legally-relevant information for lawsuit discovery; gleaning insights from anonymous web surfing data, and more. This text's extensive set of web and network problems draw on rich public-domain data sources; many are accompanied by solutions in Python and/or R. *Marketing Data Science* will be an invaluable resource for all students, faculty, and professional marketers who want to use business analytics to improve marketing performance.

PYTHON FOR SOFTWARE DESIGN

HOW TO THINK LIKE A COMPUTER SCIENTIST

Cambridge University Press A no-nonsense introduction to software design using the Python programming language. Written for people with no programming experience, this book starts with the most basic concepts and gradually adds new material. Some of the ideas students find most challenging, like recursion and object-oriented programming, are divided into a sequence of smaller steps and introduced over the course of several chapters. The focus is on the programming process, with special emphasis on debugging. The book includes a wide range of exercises, from short examples to substantial projects, so that students have ample opportunity to practise each new concept. Exercise solutions and code examples are available from thinkpython.com, along with Swampy, a suite of Python programs that is used in some of the exercises.

PRACTICAL DATA SCIENCE WITH PYTHON

LEARN TOOLS AND TECHNIQUES FROM HANDS-ON EXAMPLES TO EXTRACT INSIGHTS FROM DATA

Packt Publishing Ltd 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.

THINK PYTHON

HOW TO THINK LIKE A COMPUTER SCIENTIST

"O'Reilly Media, Inc." If you want to learn how to program, working with Python is an excellent way to start. This hands-on guide takes you through the language a step at a time, beginning with basic programming concepts before moving on to functions, recursion, data structures, and object-oriented design. This second edition and its supporting code have been updated for Python 3. Through exercises in each chapter, you'll try out programming concepts as you learn them. Think Python is ideal for students at the high school or college level, as well as self-learners, home-schooled students, and professionals who need to learn programming basics. Beginners just getting their feet wet will learn how to start with Python in a browser. Start with the basics, including language syntax and semantics Get a clear definition of each programming concept Learn about values, variables, statements, functions, and data structures in a logical progression Discover how to work with files and databases Understand objects, methods, and object-oriented programming Use

debugging techniques to fix syntax, runtime, and semantic errors Explore interface design, data structures, and GUI-based programs through case studies

UNDERNEATH THE BRAGG PEAKS

STRUCTURAL ANALYSIS OF COMPLEX MATERIALS

Newnes This book focuses on the structural determination of crystalline solids with extensive disorder. Well-established methods exist for characterizing the structure of fully crystalline solids or fully disordered materials such as liquids and glasses, but there is a dearth of techniques for the cases in-between, crystalline solids with internal atomic and nanometer scale disorder. Egami and Billinge discuss how to fill the gap using modern tools of structural characterization. This problem is encountered in the structural characterization of a surprisingly wide range of complex materials of interest to modern technology and is becoming increasingly important. Takeshi Egami received the 2003 Eugene Bertram Warren Diffraction Physics Award for the work described in the book. The authors received 2010 J. D. Hanawalt Award from the International Union of Crystallography largely based on the success of this book. Introduces a unique method to study the atomic structure of nanomaterials Lays out the basic theory and methods of this important emerging technique The first edition is considered the seminal text on the subject

PRACTICAL DATA SCIENCE WITH JUPYTER

EXPLORE DATA CLEANING, PRE-PROCESSING, DATA WRANGLING, FEATURE ENGINEERING AND MACHINE LEARNING USING PYTHON AND JUPYTER (ENGLISH EDITION)

BPB Publications Solve business problems with data-driven techniques and easy-to-follow Python examples KEY FEATURES ● Essential coverage on statistics and data science techniques. ● Exposure to Jupyter, PyCharm, and use of GitHub. ● Real use-cases, best practices, and smart techniques on the use of data science for data applications. DESCRIPTION This book begins with an introduction to Data Science followed by the Python concepts. The readers will understand how to interact with various database and Statistics concepts with their Python implementations. You will learn how to import various types of data in Python, which is the first step of the data analysis process. Once you become comfortable with data importing, you will clean the dataset and after that will gain an understanding about various visualization charts. This book focuses on how to apply feature engineering techniques to make your data more valuable to an algorithm. The readers will get to know various Machine Learning Algorithms, concepts, Time Series data, and a few real-world case studies. This book also presents some best practices that will help you to be industry-ready. This book focuses on how to practice data science techniques while learning their concepts using Python and Jupyter. This book is a complete answer to the most common question that how can you get started with Data Science instead of explaining Mathematics and Statistics behind the Machine Learning Algorithms. WHAT YOU WILL LEARN ● Rapid understanding of Python concepts for data science applications. ● Understand and practice how to run data

analysis with data science techniques and algorithms. ● Learn feature engineering, dealing with different datasets, and most trending machine learning algorithms. ● Become self-sufficient to perform data science tasks with the best tools and techniques. WHO THIS BOOK IS FOR This book is for a beginner or an experienced professional who is thinking about a career or a career switch to Data Science. Each chapter contains easy-to-follow Python examples. TABLE OF CONTENTS 1. Data Science Fundamentals 2. Installing Software and System Setup 3. Lists and Dictionaries 4. Package, Function, and Loop 5. NumPy Foundation 6. Pandas and DataFrame 7. Interacting with Databases 8. Thinking Statistically in Data Science 9. How to Import Data in Python? 10. Cleaning of Imported Data 11. Data Visualization 12. Data Pre-processing 13. Supervised Machine Learning 14. Unsupervised Machine Learning 15. Handling Time-Series Data 16. Time-Series Methods 17. Case Study-1 18. Case Study-2 19. Case Study-3 20. Case Study-4 21. Python Virtual Environment 22. Introduction to An Advanced Algorithm - CatBoost 23. Revision of All Chapters' Learning

PYTHON ALGORITHMS

MASTERING BASIC ALGORITHMS IN THE PYTHON LANGUAGE

Apress Python Algorithms explains the Python approach to algorithm analysis and design. Written by Magnus Lie Hetland, author of Beginning Python, this book is sharply focused on classical algorithms, but it also gives a solid understanding of fundamental algorithmic problem-solving techniques. The book deals with some of the most important and challenging areas of programming and computer science, but in a highly pedagogic and readable manner. The book covers both algorithmic theory and programming practice, demonstrating how theory is reflected in real Python programs. Well-known algorithms and data structures that are built into the Python language are explained, and the user is shown how to implement and evaluate others himself.

PYTHON FOR SECRET AGENTS - VOLUME II

Packt Publishing Ltd Gather, analyze, and decode data to reveal hidden facts using Python, the perfect tool for all aspiring secret agents About This Book Discover the essential features of Python programming: statements, variables, expressions, and many of the built-in data types Use Python's standard library to do more sophisticated data gathering and analysis Written by a Python programming expert, with over 35 years' experience as a consultant, teacher, author and software developer Who This Book Is For This book is for Secret Agents who have some exposure to Python. Our focus is on the Field Agents who are ready to do more sophisticated and complex programming in Python. We'll stick to simple statistics for the most part. A steady hand with a soldering iron is not required, but a skilled field agent should be able to assemble a working Arduino circuit to gather their own sensor data. What You Will Learn Upgrade Python to the latest version and discover its latest and greatest tools Use Python libraries to extract data from log files that are designed more for people to read than for automated analysis Summarize log

files and extract meaningful information Gather data from social networking sites and leverage your experience of analyzing log files to summarize the data you find Extract text and images from social networking sites Parse the complex and confusing data structures in a PDF file to extract meaningful text that we can analyze Connect small, intelligent devices to our computer to use them as remote sensors Use Python to analyze measurements from sensors to calibrate them and use sensors efficiently In Detail Python is easy to learn and extensible programming language that allows any manner of secret agent to work with a variety of data. Agents from beginners to seasoned veterans will benefit from Python's simplicity and sophistication. The standard library provides numerous packages that move beyond simple beginner missions. The Python ecosystem of related packages and libraries supports deep information processing. This book will guide you through the process of upgrading your Python-based toolset for intelligence gathering, analysis, and communication. You'll explore the ways Python is used to analyze web logs to discover the trails of activities that can be found in web and database servers. We'll also look at how we can use Python to discover details of the social network by looking at the data available from social networking websites. Finally, you'll see how to extract history from PDF files, which opens up new sources of data, and you'll learn about the ways you can gather data using an Arduino-based sensor device. Style and approach Each chapter will include a background briefing that covers an essential Python technology. After some in-depth exploration of the features, the chapter will conclude with a mission that is a concrete application of the Python tools and techniques covered.

DATA STRUCTURES AND ALGORITHMS IN PYTHON

John Wiley & Sons Based on the authors' market leading data structures books in Java and C++, this book offers a comprehensive, definitive introduction to data structures in Python by authoritative authors. Data Structures and Algorithms in Python is the first authoritative object-oriented book available for Python data structures. Designed to provide a comprehensive introduction to data structures and algorithms, including their design, analysis, and implementation, the text will maintain the same general structure as Data Structures and Algorithms in Java and Data Structures and Algorithms in C++. Begins by discussing Python's conceptually simple syntax, which allows for a greater focus on concepts. Employs a consistent object-oriented viewpoint throughout the text. Presents each data structure using ADTs and their respective implementations and introduces important design patterns as a means to organize those implementations into classes, methods, and objects. Provides a thorough discussion on the analysis and design of fundamental data structures. Includes many helpful Python code examples, with source code provided on the website. Uses illustrations to present data structures and algorithms, as well as their analysis, in a clear, visual manner. Provides hundreds of exercises that promote creativity, help readers learn how to think like programmers, and reinforce important concepts. Contains many Python-code and pseudo-code fragments, and hundreds of exercises, which are divided into roughly 40% reinforcement exercises, 40% creativity exercises, and 20% programming projects.

PYTHON AUTOMATION COOKBOOK

75 PYTHON AUTOMATION IDEAS FOR WEB SCRAPING, DATA WRANGLING, AND PROCESSING EXCEL, REPORTS, EMAILS, AND MORE, 2ND EDITION

Packt Publishing Ltd Get a firm grip on the core processes including browser automation, web scraping, Word, Excel, and GUI automation with Python 3.8 and higher Key Features Automate integral business processes such as report generation, email marketing, and lead generation Explore automated code testing and Python's growth in data science and AI automation in three new chapters Understand techniques to extract information and generate appealing graphs, and reports with Matplotlib Book Description In this updated and extended version of Python Automation Cookbook, each chapter now comprises the newest recipes and is revised to align with Python 3.8 and higher. The book includes three new chapters that focus on using Python for test automation, machine learning projects, and for working with messy data. This edition will enable you to develop a sharp understanding of the fundamentals required to automate business processes through real-world tasks, such as developing your first web scraping application, analyzing information to generate spreadsheet reports with graphs, and communicating with automatically generated emails. Once you grasp the basics, you will acquire the practical knowledge to create stunning graphs and charts using Matplotlib, generate rich graphics with relevant information, automate marketing campaigns, build machine learning projects, and execute debugging techniques. By the end of this book, you will be proficient in identifying monotonous tasks and resolving process inefficiencies to produce superior and reliable systems. What you will learn Learn data wrangling with Python and Pandas for your data science and AI projects Automate tasks such as text classification, email filtering, and web scraping with Python Use Matplotlib to generate a variety of stunning graphs, charts, and maps Automate a range of report generation tasks, from sending SMS and email campaigns to creating templates, adding images in Word, and even encrypting PDFs Master web scraping and web crawling of popular file formats and directories with tools like BeautifulSoup Build cool projects such as a Telegram bot for your marketing campaign, a reader from a news RSS feed, and a machine learning model to classify emails to the correct department based on their content Create fire-and-forget automation tasks by writing cron jobs, log files, and regexes with Python scripting Who this book is for Python Automation Cookbook - Second Edition is for developers, data enthusiasts or anyone who wants to automate monotonous manual tasks related to business processes such as finance, sales, and HR, among others. Working knowledge of Python is all you need to get started with this book.

MODEL VALIDATION AND UNCERTAINTY QUANTIFICATION, VOLUME 3

PROCEEDINGS OF THE 34TH IMAC, A CONFERENCE AND EXPOSITION ON STRUCTURAL DYNAMICS 2016

Springer Model Validation and Uncertainty Quantification, Volume 3. Proceedings

of the 34th IMAC, A Conference and Exposition on Dynamics of Multiphysical Systems: From Active Materials to Vibroacoustics, 2016, the third volume of ten from the Conference brings together contributions to this important area of research and engineering. The collection presents early findings and case studies on fundamental and applied aspects of Structural Dynamics, including papers on: • Uncertainty Quantification & Model Validation • Uncertainty Propagation in Structural Dynamics • Bayesian & Markov Chain Monte Carlo Methods • Practical Applications of MVUQ • Advances in MVUQ & Model Updating • Robustness in Design & Validation • Verification & Validation Methods

PRO SALESFORCE ANALYTICS CLOUD

A GUIDE TO WAVE PLATFORM, BUILDER, AND EXPLORER

Apres In this age of data economy, data analytics is recognized as a key differentiator for companies trying to gain a sustainable competitive advantage and outperform their peers. However, the complexity of establishing an analytical architecture due to a wide array of disparate technical capabilities offered by a plethora of vendors makes the deployment of an on-premise solution a daunting task. For this reason, the Salesforce Analytics Cloud has captured the imagination from of both IT and business communities. The Salesforce Analytics Cloud represents the rethinking of analytics for the business user. The Analytics Cloud is a cloud-based platform designed for the business user to have access to analytics "on the go," providing answers to questions instantly on any device. This mobile-ready capability of the Salesforce Analytics Cloud means users can immediately collaborate and share insights with team members right inside Salesforce. Pro Salesforce Analytics Cloud provides actionable guidance on creating analytical capabilities using Salesforce Analytics Cloud. The book offers:

- A practical guide to Salesforce Analytics Cloud, including Wave Platform, Builder, and Explorer.
- Detailed business analytics use cases in various industries (e.g., retail, healthcare, financial services, and telecommunications).
- Architecture and best practices for integration, security, hybrid cloud coexistence, and governance.

Pro Salesforce Analytics Cloud is the first comprehensive book on Salesforce Analytics and provides a holistic architecture view of different analytical capabilities and how they fit into the overall information architecture. It features real-world industry use cases and demonstrates how Salesforce's Analytics Cloud solves business challenges and brings real value to the organization.

PYOMO - OPTIMIZATION MODELING IN PYTHON

Springer Science & Business Media This book provides a complete and comprehensive reference/guide to Pyomo (Python Optimization Modeling Objects) for both beginning and advanced modelers, including students at the undergraduate and graduate levels, academic researchers, and practitioners. The text illustrates the breadth of the modeling and analysis capabilities that are supported by the software and support of complex real-world applications. Pyomo is an open source software package for formulating and solving large-scale optimization and operations

research problems. The text begins with a tutorial on simple linear and integer programming models. A detailed reference of Pyomo's modeling components is illustrated with extensive examples, including a discussion of how to load data from data sources like spreadsheets and databases. Chapters describing advanced modeling capabilities for nonlinear and stochastic optimization are also included. The Pyomo software provides familiar modeling features within Python, a powerful dynamic programming language that has a very clear, readable syntax and intuitive object orientation. Pyomo includes Python classes for defining sparse sets, parameters, and variables, which can be used to formulate algebraic expressions that define objectives and constraints. Moreover, Pyomo can be used from a command-line interface and within Python's interactive command environment, which makes it easy to create Pyomo models, apply a variety of optimizers, and examine solutions. The software supports a different modeling approach than commercial AML (Algebraic Modeling Languages) tools, and is designed for flexibility, extensibility, portability, and maintainability but also maintains the central ideas in modern AMLs.

PYTHON DATA SCIENCE HANDBOOK

ESSENTIAL TOOLS FOR WORKING WITH DATA

"O'Reilly Media, Inc." For many researchers, Python is a first-class tool mainly because of its libraries for storing, manipulating, and gaining insight from data. Several resources exist for individual pieces of this data science stack, but only with the Python Data Science Handbook do you get them all—IPython, NumPy, Pandas, Matplotlib, Scikit-Learn, and other related tools. Working scientists and data crunchers familiar with reading and writing Python code will find this comprehensive desk reference ideal for tackling day-to-day issues: manipulating, transforming, and cleaning data; visualizing different types of data; and using data to build statistical or machine learning models. Quite simply, this is the must-have reference for scientific computing in Python. With this handbook, you'll learn how to use: IPython and Jupyter: provide computational environments for data scientists using Python NumPy: includes the ndarray for efficient storage and manipulation of dense data arrays in Python Pandas: features the DataFrame for efficient storage and manipulation of labeled/columnar data in Python Matplotlib: includes capabilities for a flexible range of data visualizations in Python Scikit-Learn: for efficient and clean Python implementations of the most important and established machine learning algorithms

LEARNING SCIENTIFIC PROGRAMMING WITH PYTHON

Cambridge University Press Learn to master basic programming tasks from scratch with real-life scientifically relevant examples and solutions drawn from both science and engineering. Students and researchers at all levels are increasingly turning to the powerful Python programming language as an alternative to commercial packages and this fast-paced introduction moves from the basics to advanced concepts in one complete volume, enabling readers to quickly gain

proficiency. Beginning with general programming concepts such as loops and functions within the core Python 3 language, and moving onto the NumPy, SciPy and Matplotlib libraries for numerical programming and data visualisation, this textbook also discusses the use of IPython notebooks to build rich-media, shareable documents for scientific analysis. Including a final chapter introducing challenging topics such as floating-point precision and algorithm stability, and with extensive online resources to support advanced study, this textbook represents a targeted package for students requiring a solid foundation in Python programming.

THE PRACTICE OF REPRODUCIBLE RESEARCH

CASE STUDIES AND LESSONS FROM THE DATA-INTENSIVE SCIENCES

Univ of California Press The Practice of Reproducible Research presents concrete examples of how researchers in the data-intensive sciences are working to improve the reproducibility of their research projects. In each of the thirty-one case studies in this volume, the author or team describes the workflow that they used to complete a real-world research project. Authors highlight how they utilized particular tools, ideas, and practices to support reproducibility, emphasizing the very practical how, rather than the why or what, of conducting reproducible research. Part 1 provides an accessible introduction to reproducible research, a basic reproducible research project template, and a synthesis of lessons learned from across the thirty-one case studies. Parts 2 and 3 focus on the case studies themselves. The Practice of Reproducible Research is an invaluable resource for students and researchers who wish to better understand the practice of data-intensive sciences and learn how to make their own research more reproducible.

MODELING TECHNIQUES IN PREDICTIVE ANALYTICS WITH PYTHON AND R

A GUIDE TO DATA SCIENCE

FT Press Master predictive analytics, from start to finish Start with strategy and management Master methods and build models Transform your models into highly-effective code—in both Python and R This one-of-a-kind book will help you use predictive analytics, Python, and R to solve real business problems and drive real competitive advantage. You'll master predictive analytics through realistic case studies, intuitive data visualizations, and up-to-date code for both Python and R—not complex math. Step by step, you'll walk through defining problems, identifying data, crafting and optimizing models, writing effective Python and R code, interpreting results, and more. Each chapter focuses on one of today's key applications for predictive analytics, delivering skills and knowledge to put models to work—and maximize their value. Thomas W. Miller, leader of Northwestern University's pioneering program in predictive analytics, addresses everything you need to succeed: strategy and management, methods and models, and technology and code. If you're new to predictive analytics, you'll gain a strong foundation for achieving accurate, actionable results. If you're already working in the field, you'll master powerful new skills. If you're familiar with either Python or R, you'll discover how

these languages complement each other, enabling you to do even more. All data sets, extensive Python and R code, and additional examples available for download at <http://www.ftpress.com/miller/> Python and R offer immense power in predictive analytics, data science, and big data. This book will help you leverage that power to solve real business problems, and drive real competitive advantage. Thomas W. Miller's unique balanced approach combines business context and quantitative tools, illuminating each technique with carefully explained code for the latest versions of Python and R. If you're new to predictive analytics, Miller gives you a strong foundation for achieving accurate, actionable results. If you're already a modeler, programmer, or manager, you'll learn crucial skills you don't already have. Using Python and R, Miller addresses multiple business challenges, including segmentation, brand positioning, product choice modeling, pricing research, finance, sports, text analytics, sentiment analysis, and social network analysis. He illuminates the use of cross-sectional data, time series, spatial, and spatio-temporal data. You'll learn why each problem matters, what data are relevant, and how to explore the data you've identified. Miller guides you through conceptually modeling each data set with words and figures; and then modeling it again with realistic code that delivers actionable insights. You'll walk through model construction, explanatory variable subset selection, and validation, mastering best practices for improving out-of-sample predictive performance. Miller employs data visualization and statistical graphics to help you explore data, present models, and evaluate performance. Appendices include five complete case studies, and a detailed primer on modern data science methods. Use Python and R to gain powerful, actionable, profitable insights about: Advertising and promotion Consumer preference and choice Market baskets and related purchases Economic forecasting Operations management Unstructured text and language Customer sentiment Brand and price Sports team performance And much more

A GENTLE INTRODUCTION TO EFFECTIVE COMPUTING IN QUANTITATIVE RESEARCH

WHAT EVERY RESEARCH ASSISTANT SHOULD KNOW

MIT Press A practical guide to using modern software effectively in quantitative research in the social and natural sciences. This book offers a practical guide to the computational methods at the heart of most modern quantitative research. It will be essential reading for research assistants needing hands-on experience; students entering PhD programs in business, economics, and other social or natural sciences; and those seeking quantitative jobs in industry. No background in computer science is assumed; a learner need only have a computer with access to the Internet. Using the example as its principal pedagogical device, the book offers tried-and-true prototypes that illustrate many important computational tasks required in quantitative research. The best way to use the book is to read it at the computer keyboard and learn by doing. The book begins by introducing basic skills: how to use the operating system, how to organize data, and how to complete simple programming tasks. For its demonstrations, the book uses a UNIX-based operating system and a set of free software tools: the scripting language Python for

programming tasks; the database management system SQLite; and the freely available R for statistical computing and graphics. The book goes on to describe particular tasks: analyzing data, implementing commonly used numerical and simulation methods, and creating extensions to Python to reduce cycle time. Finally, the book describes the use of LaTeX, a document markup language and preparation system.

PYTHON WORKOUT

50 TEN-MINUTE EXERCISES

Manning Publications The only way to master a skill is to practice. In Python Workout, author Reuven M. Lerner guides you through 50 carefully selected exercises that invite you to flex your programming muscles. As you take on each new challenge, you'll build programming skill and confidence. Summary The only way to master a skill is to practice. In Python Workout, author Reuven M. Lerner guides you through 50 carefully selected exercises that invite you to flex your programming muscles. As you take on each new challenge, you'll build programming skill and confidence. The thorough explanations help you lock in what you've learned and apply it to your own projects. Along the way, Python Workout provides over four hours of video instruction walking you through the solutions to each exercise and dozens of additional exercises for you to try on your own. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology To become a champion Python programmer you need to work out, building mental muscle with your hands on the keyboard. Each carefully selected exercise in this unique book adds to your Python prowess—one important skill at a time. About the book Python Workout presents 50 exercises that focus on key Python 3 features. In it, expert Python coach Reuven Lerner guides you through a series of small projects, practicing the skills you need to tackle everyday tasks. You'll appreciate the clear explanations of each technique, and you can watch Reuven solve each exercise in the accompanying videos. What's inside 50 hands-on exercises and solutions Coverage of all Python data types Dozens more bonus exercises for extra practice About the reader For readers with basic Python knowledge. About the author Reuven M. Lerner teaches Python and data science to companies around the world. Table of Contents 1 Numeric types 2 Strings 3 Lists and tuples 4 Dictionaries and sets 5 Files 6 Functions 7 Functional programming with comprehensions 8 Modules and packages 9 Objects 10 Iterators and generators