

Powerful Python Data Analysis Toolkit Pandas Pydata

Making Big Data Work: Real-World Use Cases and Examples, Practical Code, Detailed Solutions Large-scale data analysis is now vitally important to virtually every business. Mobile and social technologies are generating massive datasets; distributed cloud computing offers the resources to store and analyze them; and professionals have radically new technologies at their command, including NoSQL databases. Until now, however, most books on “Big Data” have been little more than business polemics or product catalogs. Data Just Right is different: It’s a completely practical and indispensable guide for every Big Data decision-maker, implementer, and strategist. Michael Manoochchri, a former Google engineer and data hacker, writes for professionals who need practical solutions that can be implemented with limited resources and time. Drawing on his extensive experience, he helps you focus on building applications, rather than infrastructure, because that’s where you can derive the most value. Manoochchri shows how to address each of today’s key Big Data use cases in a cost-effective way by combining technologies in hybrid solutions. You’ll find expert approaches to managing massive datasets, visualizing data, building data pipelines and dashboards, choosing tools for statistical analysis, and more. Throughout, the author demonstrates techniques using many of today’s leading data analysis tools, including Hadoop, Hive, Shark, R, Apache Pig, Mahout, and Google BigQuery. Coverage includes Mastering the four guiding principles of Big Data success—and avoiding common pitfalls Emphasizing collaboration and avoiding problems with siloed data Hosting and sharing multi-terabyte datasets efficiently and economically “Building for infinity” to support rapid growth Developing a NoSQL Web app with Redis to collect crowd-

sourced data Running distributed queries over massive datasets with Hadoop, Hive, and Shark Building a data dashboard with Google BigQuery Exploring large datasets with advanced visualization Implementing efficient pipelines for transforming immense amounts of data Automating complex processing with Apache Pig and the Cascading Java library Applying machine learning to classify, recommend, and predict incoming information Using R to perform statistical analysis on massive datasets Building highly efficient analytics workflows with Python and Pandas Establishing sensible purchasing strategies: when to build, buy, or outsource Previewing emerging trends and convergences in scalable data technologies and the evolving role of the Data Scientist

Python is rapidly becoming the de facto standard language for systems integration. Python has a large user and developer-base external to the neuroscience community, and a vast module library that facilitates rapid and maintainable development of complex and intricate systems. In this Research Topic, we highlight recent efforts to develop Python modules for the domain of neuroscience software and neuroinformatics: - simulators and simulator interfaces - data collection and analysis - sharing, re-use, storage and databasing of models and data - stimulus generation - parameter search and optimization - visualization - VLSI hardware interfacing. Moreover, we seek to provide a representative overview of existing mature Python modules for neuroscience and neuroinformatics, to demonstrate a critical mass and show that Python is an appropriate choice of interpreter interface for future neuroscience software development. Build your Machine Learning portfolio by creating 6 cutting-edge Artificial Intelligence projects using neural networks in Python Key Features Discover neural network architectures (like CNN and LSTM) that are driving recent advancements in AI Build expert neural networks in Python

using popular libraries such as Keras Includes projects such as object detection, face identification, sentiment analysis, and more Book Description Neural networks are at the core of recent AI advances, providing some of the best resolutions to many real-world problems, including image recognition, medical diagnosis, text analysis, and more. This book goes through some basic neural network and deep learning concepts, as well as some popular libraries in Python for implementing them. It contains practical demonstrations of neural networks in domains such as fare prediction, image classification, sentiment analysis, and more. In each case, the book provides a problem statement, the specific neural network architecture required to tackle that problem, the reasoning behind the algorithm used, and the associated Python code to implement the solution from scratch. In the process, you will gain hands-on experience with using popular Python libraries such as Keras to build and train your own neural networks from scratch. By the end of this book, you will have mastered the different neural network architectures and created cutting-edge AI projects in Python that will immediately strengthen your machine learning portfolio. What you will learn Learn various neural network architectures and its advancements in AI Master deep learning in Python by building and training neural network Master neural networks for regression and classification Discover convolutional neural networks for image recognition Learn sentiment analysis on textual data using Long Short-Term Memory Build and train a highly accurate facial recognition security system Who this book is for This book is a perfect match for data scientists, machine learning engineers, and deep learning enthusiasts who wish to create practical neural network projects in Python. Readers should already have some basic knowledge of machine learning and neural networks.

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Take the next steps in your data science career! This friendly and hands-on guide shows you how to start mastering Pandas with skills you already know from spreadsheet software. In *Pandas in Action* you will learn how to: Import datasets, identify issues with their data structures, and optimize them for efficiency Sort, filter, pivot, and draw conclusions from a dataset and its subsets Identify trends from text-based and time-based data Organize, group, merge, and join separate datasets Use a GroupBy object to store multiple DataFrames Pandas has rapidly become one of Python's most popular data analysis libraries. In *Pandas in Action*, a friendly and example-rich introduction, author Boris Paskhaver shows you how to master this versatile tool and take the next steps in your data science career. You'll learn how easy Pandas makes it to efficiently sort, analyze, filter and munge almost any type of data. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Data analysis with Python doesn't have to be hard. If you can use a spreadsheet, you can learn pandas! While its grid-style layouts may remind you of Excel, pandas is far more flexible and powerful. This Python library quickly performs operations on millions of rows, and it interfaces easily with other tools in the Python data ecosystem. It's a perfect way to up your data game. About the book *Pandas in Action* introduces Python-based data analysis using the amazing pandas library. You'll learn to automate repetitive operations and gain deeper insights into your data that would be impractical—or impossible—in Excel. Each chapter is a self-contained tutorial. Realistic downloadable datasets help you learn from the kind of messy data you'll find in the real world. What's inside Organize, group, merge, split, and join datasets Find trends in text-based and time-based data Sort, filter, pivot, optimize, and draw conclusions Apply aggregate operations About the reader For readers experienced with

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spreadsheets and basic Python programming. About the author Boris Paskhaver is a software engineer, Agile consultant, and online educator. His programming courses have been taken by 300,000 students across 190 countries. Table of Contents PART 1 CORE PANDAS 1 Introducing pandas 2 The Series object 3 Series methods 4 The DataFrame object 5 Filtering a DataFrame PART 2 APPLIED PANDAS 6 Working with text data 7 MultiIndex DataFrames 8 Reshaping and pivoting 9 The GroupBy object 10 Merging, joining, and concatenating 11 Working with dates and times 12 Imports and exports 13 Configuring pandas 14 Visualization Presents case studies and instructions on how to solve data analysis problems using Python. Ready to learn Data Science through Python language? Python for Data Analysis is a step-by-step guide for beginners and dabblers-alike. This book is designed to offer working knowledge of Python and data science and some of the tools required to apply that knowledge. It's possible that you have little experience with or knowledge of data analysis and are interested in it. You might have some experience in coding. You may have worked with data before and want to use Python. We have made this book in a way that will be helpful to all these groups and more besides in varying ways. This can serve as an introduction to the most current tools and functions of those tools used by data scientists. In this book You will learn: Data Science/Analysis and its applications IPython and Jupyter - an introduction to the basic tools and how to navigate and use them. You will also learn about its importance in a data scientist's ecosystem. Pandas - a powerful data management Python library that lets you do interesting things with data. You will learn all the basics you need to get started. NumPy - a powerful numerical library for Python. You will learn more about its advantages. Get your copy now

“Practical Data Analysis – Using Python & Open Source Technology” uses a case-study based approach to explore some of the real-world applications of open source data analysis tools and techniques. Specifically, the following topics are covered in this book: 1. Open Source Data Analysis Tools and Techniques. 2. A Beginner’s Guide to “Python” for Data Analysis. 3. Implementing Custom Search Engines On The Fly. 4. Visualising Missing Data. 5. Sentiment Analysis and Named Entity Recognition. 6. Automatic Document Classification, Clustering and Summarisation. 7. Fraud Detection Using Machine Learning Techniques. 8. Forecasting - Using Data to Map the Future. 9. Continuous Monitoring and Real-Time Analytics. 10. Creating a Robot for Interacting with Web Applications. Free samples of the book is available at - <http://timesofdatascience.com>

Social technology is quickly becoming a vital tool in our personal, educational, and professional lives. Its use must be further examined in order to determine the role of social media technology in organizational settings to promote business development and growth. Social Network Analytics for Contemporary Business Organizations is a critical scholarly resource that analyzes the application of social media in business applications. Featuring coverage on a broad range of topics, such as business management, dynamic networks, and online interaction, this book is geared towards professionals, researchers, academics, students, managers, and practitioners actively involved in the business industry.

Python is a highly expressive language that makes it easy to write sophisticated programs. Combining high-quality geospatial data with Python geospatial libraries will give you a powerful toolkit for solving a range of geospatial

programming tasks. The book begins with an introduction to geospatial analysis and programming and explains the ideas behind geospatial data. You will explore Python libraries for building your own geospatial applications. You will learn to create a geospatial database for your application using PostGIS and the psycopg2 library, and see how the Mapnik library can be used to create attractive and useful maps. Finally, you will learn to use the Shapely and NetworkX libraries to create, analyze, and manipulate complex geometric objects, before implementing a system to match GPS recordings against a database of roads to produce a heatmap of the most frequently used roads.

A guide to completing Python projects for those ready to take their skills to the next level Python Projects is the ultimate resource for the Python programmer with basic skills who is ready to move beyond tutorials and start building projects. The preeminent guide to bridge the gap between learning and doing, this book walks readers through the "where" and "how" of real-world Python programming with practical, actionable instruction. With a focus on real-world functionality, Python Projects details the ways that Python can be used to complete daily tasks and bring efficiency to businesses and individuals alike. Python Projects is written specifically for those who know the Python syntax and lay of the land, but may still be intimidated by larger, more complex projects. The book provides a walk-

through of the basic set-up for an application and the building and packaging for a library, and explains in detail the functionalities related to the projects. Topics include: *How to maximize the power of the standard library modules *Where to get third party libraries, and the best practices for utilization *Creating, packaging, and reusing libraries within and across projects *Building multi-layered functionality including networks, data, and user interfaces *Setting up development environments and using virtualenv, pip, and more Written by veteran Python trainers, the book is structured for easy navigation and logical progression that makes it ideal for individual, classroom, or corporate training. For Python developers looking to apply their skills to real-world challenges, Python Projects is a goldmine of information and expert insight.

Explore the latest Python tools and techniques to help you tackle the world of data acquisition and analysis. You'll review scientific computing with NumPy, visualization with matplotlib, and machine learning with scikit-learn. This revision is fully updated with new content on social media data analysis, image analysis with OpenCV, and deep learning libraries. Each chapter includes multiple examples demonstrating how to work with each library. At its heart lies the coverage of pandas, for high-performance, easy-to-use data structures and tools for data manipulation Author Fabio Nelli expertly demonstrates using Python for

data processing, management, and information retrieval. Later chapters apply what you've learned to handwriting recognition and extending graphical capabilities with the JavaScript D3 library. Whether you are dealing with sales data, investment data, medical data, web page usage, or other data sets, Python Data Analytics, Second Edition is an invaluable reference with its examples of storing, accessing, and analyzing data. What You'll Learn Understand the core concepts of data analysis and the Python ecosystem Go in depth with pandas for reading, writing, and processing data Use tools and techniques for data visualization and image analysis Examine popular deep learning libraries Keras, Theano, TensorFlow, and PyTorch Who This Book Is For Experienced Python developers who need to learn about Pythonic tools for data analysis Cognitive Computing is a new topic which aims to simulate human thought processes using computers that self-learn through data mining, pattern recognition, and natural language processing. This book focuses on the applications of Cognitive Computing in areas like Robotics, Blockchain, Deep Learning, and Wireless Technologies. This book covers the basics of Green Computing, discusses Cognitive Science methodologies in Robotics, Computer Science, Wireless Networks, and Deep Learning. It goes on to present empirical data and research techniques, modelling techniques and offers a data-driven

approach to decision making and problem solving. This book is written for researchers, academicians, undergraduate and graduate students, and industry persons who are working on current applications of Cognitive Computing. Discover techniques to summarize the characteristics of your data using PyPlot, NumPy, SciPy, and pandas Key Features Understand the fundamental concepts of exploratory data analysis using Python Find missing values in your data and identify the correlation between different variables Practice graphical exploratory analysis techniques using Matplotlib and the Seaborn Python package Book Description Exploratory Data Analysis (EDA) is an approach to data analysis that involves the application of diverse techniques to gain insights into a dataset. This book will help you gain practical knowledge of the main pillars of EDA - data cleaning, data preparation, data exploration, and data visualization. You'll start by performing EDA using open source datasets and perform simple to advanced analyses to turn data into meaningful insights. You'll then learn various descriptive statistical techniques to describe the basic characteristics of data and progress to performing EDA on time-series data. As you advance, you'll learn how to implement EDA techniques for model development and evaluation and build predictive models to visualize results. Using Python for data analysis, you'll work with real-world datasets, understand data, summarize its characteristics,

and visualize it for business intelligence. By the end of this EDA book, you'll have developed the skills required to carry out a preliminary investigation on any dataset, yield insights into data, present your results with visual aids, and build a model that correctly predicts future outcomes. What you will learn

- Import, clean, and explore data to perform preliminary analysis using powerful Python packages
- Identify and transform erroneous data using different data wrangling techniques
- Explore the use of multiple regression to describe non-linear relationships
- Discover hypothesis testing and explore techniques of time-series analysis
- Understand and interpret results obtained from graphical analysis
- Build, train, and optimize predictive models to estimate results
- Perform complex EDA techniques on open source datasets

Who this book is for This EDA book is for anyone interested in data analysis, especially students, statisticians, data analysts, and data scientists. The practical concepts presented in this book can be applied in various disciplines to enhance decision-making processes with data analysis and synthesis. Fundamental knowledge of Python programming and statistical concepts is all you need to get started with this book.

Remote image capture systems are a key element in efficient and sustainable agriculture nowadays. They are increasingly being used to obtain information of interest from the crops, the soil and the environment. It includes different types of

capturing devices: from satellites and drones, to in-field devices; different types of spectral information, from visible RGB images, to multispectral images; different types of applications; and different types of techniques in the areas of image processing, computer vision, pattern recognition and machine learning. This book covers all these aspects, through a series of chapters that describe specific recent applications of these techniques in interesting problems of agricultural engineering.

"Welcome to the most comprehensive Pandas course available on Udemy! An excellent choice for both beginners and experts looking to expand their knowledge on one of the most popular Python libraries in the world! Data analysis with Pandas and Python offers 19+ hours of in-depth video tutorials on the most powerful data analysis toolkit available today. Lessons include: installing, sorting, filtering, grouping, aggregating, de-duplicating, pivoting, munging, deleting, merging, visualizing, and more! Why learn pandas? If you've spent time in a spreadsheet software like Microsoft Excel, Apple Numbers, or Google Sheets and are eager to take your data analysis skills to the next level, this course is for you! Data Analysis with Pandas and Python introduces you to the popular Pandas library built on top of the Python programming language. Pandas is a powerhouse tool that allows you to do anything and everything with

colossal data sets--analyzing, organizing, sorting, filtering, pivoting, aggregating, munging, cleaning, calculating, and more! I call it 'Excel on steroids!'--Resource description page.

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This book presents the proceedings of four conferences: The 16th International Conference on Frontiers in Education: Computer Science and Computer Engineering + STEM (FECS'20), The 16th International Conference on Foundations of Computer Science (FCS'20), The 18th International Conference on Software Engineering Research and Practice (SERP'20), and The 19th International Conference on e-Learning, e-Business, Enterprise Information Systems, & e-Government (EEE'20). The conferences took place in Las Vegas, NV, USA, July 27-30, 2020 as part of the larger 2020 World Congress in Computer Science, Computer Engineering, & Applied

Computing (CSCE'20), which features 20 major tracks. Authors include academics, researchers, professionals, and students. This book contains an open access chapter entitled, "Advances in Software Engineering, Education, and e-Learning". Presents the proceedings of four conferences as part of the 2020 World Congress in Computer Science, Computer Engineering, & Applied Computing (CSCE'20); Includes the tracks Computer Engineering + STEM, Foundations of Computer Science, Software Engineering Research, and e-Learning, e-Business, Enterprise Information Systems, & e-Government; Features papers from FECS'20, FCS'20, SERP'20, EEE'20, including one open access chapter.

Social media has become an integral part of society as social networking has become a main form of communication and human interaction. To stay relevant, businesses have adopted social media tactics to interact with consumers, conduct business, and remain competitive. Social technologies have reached a vital point in the business world, being essential in strategic decision-making processes, building relationships with consumers, marketing and branding efforts, and other important areas. While social media continues to gain importance in modern society, it is essential to determine how it functions in contemporary business. The Research Anthology on Strategies for Using Social Media as a Service and Tool in Business provides updated information on how businesses are strategically using social media and explores the role of social media in keeping businesses competitive in the global economy. The chapters will discuss how

social tools work, what services businesses are utilizing, both the benefits and challenges to how social media is changing the modern business atmosphere, and more. This book is essential for researchers, instructors, social media managers, business managers, students, executives, practitioners, industry professionals, social media analysts, and all audiences interested in how social media is being used in modern businesses as both a service and integral tool.

Understand data analysis pipelines using machine learning algorithms and techniques with this practical guide Key Features Prepare and clean your data to use it for exploratory analysis, data manipulation, and data wrangling Discover supervised, unsupervised, probabilistic, and Bayesian machine learning methods Get to grips with graph processing and sentiment analysis Book Description Data analysis enables you to generate value from small and big data by discovering new patterns and trends, and Python is one of the most popular tools for analyzing a wide variety of data. With this book, you'll get up and running using Python for data analysis by exploring the different phases and methodologies used in data analysis and learning how to use modern libraries from the Python ecosystem to create efficient data pipelines. Starting with the essential statistical and data analysis fundamentals using Python, you'll perform complex data analysis and modeling, data manipulation, data cleaning, and data visualization using easy-to-follow examples. You'll then understand how to conduct time series analysis and signal processing using ARMA models. As you advance, you'll get

to grips with smart processing and data analytics using machine learning algorithms such as regression, classification, Principal Component Analysis (PCA), and clustering. In the concluding chapters, you'll work on real-world examples to analyze textual and image data using natural language processing (NLP) and image analytics techniques, respectively. Finally, the book will demonstrate parallel computing using Dask. By the end of this data analysis book, you'll be equipped with the skills you need to prepare data for analysis and create meaningful data visualizations for forecasting values from data. What you will learn

- Explore data science and its various process models
- Perform data manipulation using NumPy and pandas for aggregating, cleaning, and handling missing values
- Create interactive visualizations using Matplotlib, Seaborn, and Bokeh
- Retrieve, process, and store data in a wide range of formats
- Understand data preprocessing and feature engineering using pandas and scikit-learn
- Perform time series analysis and signal processing using sunspot cycle data
- Analyze textual data and image data to perform advanced analysis
- Get up to speed with parallel computing using Dask

Who this book is for This book is for data analysts, business analysts, statisticians, and data scientists looking to learn how to use Python for data analysis. Students and academic faculties will also find this book useful for learning and teaching Python data analysis using a hands-on approach. A basic understanding of math and working knowledge of the Python programming language will help you get started with this book.

The complex and multidisciplinary nature of environmental problems requires that they are dealt with in an integrated manner. Modeling and software have become key instruments used to promote sustainability and improve environmental decision processes, especially through systematic integration of various knowledge and data and their ability to foster learning and help make predictions. This book presents the current state-of-the-art in environmental modeling and software and identifies the future challenges in the field. State-of-the-art in environmental modeling and software theory and practice for integrated assessment and management serves as a starting point for researchers. Identifies the areas of research and practice required for advancing the requisite knowledge base and tools, and their wider usage. Best practices of environmental modeling enables the reader to select appropriate software and gives the reader tools to integrate natural system dynamics with human dimensions. Computational Learning Approaches to Data Analytics in Biomedical Applications provides a unified framework for biomedical data analysis using varied machine learning and statistical techniques. It presents insights on biomedical data processing, innovative clustering algorithms and techniques, and connections between statistical analysis and clustering. The book introduces and discusses the major problems relating to data analytics, provides a review of influential and state-of-the-art learning algorithms for biomedical applications, reviews cluster validity indices and how to select the appropriate index, and includes an overview of statistical methods that can be applied

to increase confidence in the clustering framework and analysis of the results obtained. Includes an overview of data analytics in biomedical applications and current challenges Updates on the latest research in supervised learning algorithms and applications, clustering algorithms and cluster validation indices Provides complete coverage of computational and statistical analysis tools for biomedical data analysis Presents hands-on training on the use of Python libraries, MATLAB® tools, WEKA, SAP-HANA and R/Bioconductor

Leverage the power of Python to clean, scrape, analyze, and visualize your data About This Book Clean, format, and explore your data using the popular Python libraries and get valuable insights from it Analyze big data sets; create attractive visualizations; manipulate and process various data types using NumPy, SciPy, and matplotlib; and more Packed with easy-to-follow examples to develop advanced computational skills for the analysis of complex data Who This Book Is For This course is for developers, analysts, and data scientists who want to learn data analysis from scratch. This course will provide you with a solid foundation from which to analyze data with varying complexity. A working knowledge of Python (and a strong interest in playing with your data) is recommended. What You Will Learn Understand the importance of data analysis and master its processing steps Get comfortable using Python and its associated data analysis libraries such as Pandas, NumPy, and SciPy Clean and transform your data and apply advanced statistical analysis to create attractive

visualizations Analyze images and time series data Mine text and analyze social networks Perform web scraping and work with different databases, Hadoop, and Spark Use statistical models to discover patterns in data Detect similarities and differences in data with clustering Work with Jupyter Notebook to produce publication-ready figures to be included in reports In Detail Data analysis is the process of applying logical and analytical reasoning to study each component of data present in the system. Python is a multi-domain, high-level, programming language that offers a range of tools and libraries suitable for all purposes, it has slowly evolved as one of the primary languages for data science. Have you ever imagined becoming an expert at effectively approaching data analysis problems, solving them, and extracting all of the available information from your data? If yes, look no further, this is the course you need! In this course, we will get you started with Python data analysis by introducing the basics of data analysis and supported Python libraries such as matplotlib, NumPy, and pandas. Create visualizations by choosing color maps, different shapes, sizes, and palettes then delve into statistical data analysis using distribution algorithms and correlations. You'll then find your way around different data and numerical problems, get to grips with Spark and HDFS, and set up migration scripts for web mining. You'll be able to quickly and accurately perform hands-on sorting, reduction, and subsequent analysis, and fully appreciate how data analysis methods can support business decision-making. Finally, you will delve into advanced techniques such as performing regression, quantifying

cause and effect using Bayesian methods, and discovering how to use Python's tools for supervised machine learning. The course provides you with highly practical content explaining data analysis with Python, from the following Packt books: *Getting Started with Python Data Analysis*. *Python Data Analysis Cookbook*. *Mastering Python Data Analysis*. By the end of this course, you will have all the knowledge you need to analyze your data with varying complexity levels, and turn it into actionable insights. Style and approach Learn Python data analysis using engaging examples and fun exercises, and with a gentle and friendly but comprehensive "learn-by-doing" approach. It offers you a useful way of analyzing 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 data analysis.

This book reports on new theories and applications in the field of intelligent systems and computing. It covers computational and artificial intelligence methods, as well as advances in computer vision, current issues in big data and cloud computing, computation linguistics, and cyber-physical systems. It also reports on data mining and knowledge extraction technologies, as well as central issues in intelligent information management. Written by active researchers, the respective chapters are based on papers presented at the International Conference on Computer Science and Information Technologies (CSIT 2017), held on September 5–8, 2017, in Lviv, Ukraine; and at two workshops accompanying the conference: one on inductive modeling, jointly

organized by the Lviv Polytechnic National University and the National Academy of Science of Ukraine; and another on project management, which was jointly organized by the Lviv Polytechnic National University, the International Project Management Association, the Ukrainian Project Management Association, the Kazakhstan Project Management Association, and Nazarbayev University. Given its breadth of coverage, the book provides academics and professionals with extensive information and a timely snapshot of the field of intelligent systems, and is sure to foster new discussions and collaborations among different groups.

This book constitutes the proceedings of the 22nd International Conference on Speech and Computer, SPECOM 2020, held in St. Petersburg, Russia, in October 2020. The 65 papers presented were carefully reviewed and selected from 160 submissions. The papers present current research in the area of computer speech processing including speech science, speech technology, natural language processing, human-computer interaction, language identification, multimedia processing, human-machine interaction, deep learning for audio processing, computational paralinguistics, affective computing, speech and language resources, speech translation systems, text mining and sentiment analysis, voice assistants, etc. Due to the Corona pandemic SPECOM 2020 was held as a virtual event.

Each chapter of the book quickly introduces a key 'theme' of Data Analysis, before immersing you in the practical aspects of each theme. You'll learn quickly

how to perform all aspects of Data Analysis. Practical Data Analysis is a book ideal for home and small business users who want to slice & dice the data they have on hand with minimum hassle.

Panduan framework django yang komprehensif disertai studi kasus untuk keperluan data analysis dengan pustaka Matplotlib, Numpy, Pandas, Wordcloud, NetworkX, gmplot, ScikitLearn, dan masih banyak lagi serta integrasinya dengan bahasa R, OpenCV, Unicorn, dan web service Nginx di Linux.

Would you like to gather big datasets, analyze them, and visualize the results, all in one program? If this describes you, then Introduction to Python Programming for Business and Social Science Applications is the book for you. Authors Frederick Kaefer and Paul Kaefer walk you through each step of the Python package installation and analysis process, with frequent exercises throughout so you can immediately try out the functions you've learned. Written in straightforward language for those with no programming background, this book will teach you how to use Python for your research and data analysis. Instead of teaching you the principles and practices of programming as a whole, this application-oriented text focuses on only what you need to know to research and answer social science questions. The text features two types of examples, one set from the General Social Survey and one set from a large taxi trip dataset from

a major metropolitan area, to help readers understand the possibilities of working with Python. Chapters on installing and working within a programming environment, basic skills, and necessary commands will get you up and running quickly, while chapters on programming logic, data input and output, and data frames help you establish the basic framework for conducting analyses. Further chapters on web scraping, statistical analysis, machine learning, and data visualization help you apply your skills to your research. More advanced information on developing graphical user interfaces (GUIs) help you create functional data products using Python to inform general users of data who don't work within Python. First there was IBM® SPSS®, then there was R, and now there's Python. Statistical software is getting more aggressive - let authors Frederick Kaefer and Paul Kaefer help you tame it with Introduction to Python Programming for Business and Social Science Applications.

Erfahren Sie alles über das Manipulieren, Bereinigen, Verarbeiten und Aufbereiten von Datensätzen mit Python: Aktualisiert auf Python 3.6, zeigt Ihnen dieses konsequent praxisbezogene Buch anhand konkreter Fallbeispiele, wie Sie eine Vielzahl von typischen Datenanalyse-Problemen effektiv lösen. Gleichzeitig lernen Sie die neuesten Versionen von pandas, NumPy, IPython und Jupyter kennen. Geschrieben von Wes McKinney, dem Begründer des pandas-Projekts,

bietet Datenanalyse mit Python einen praktischen Einstieg in die Data-Science-Tools von Python. Das Buch eignet sich sowohl für Datenanalysten, für die Python Neuland ist, als auch für Python-Programmierer, die sich in Data Science und Scientific Computing einarbeiten wollen. Daten und zugehöriges Material des Buchs sind auf GitHub verfügbar. Aus dem Inhalt: Nutzen Sie die IPython-Shell und Jupyter Notebook für das explorative Computing Lernen Sie Grundfunktionen und fortgeschrittene Features von NumPy kennen Setzen Sie die Datenanalyse-Tools der pandasBibliothek ein Verwenden Sie flexible Werkzeuge zum Laden, Bereinigen, Transformieren, Zusammenführen und Umformen von Daten Erstellen Sie interformative Visualisierungen mit matplotlib Wenden Sie die GroupBy-Mechanismen von pandas an, um Datensätzen zurechtzuschneiden, umzugestalten und zusammenzufassen Analysieren und manipulieren Sie verschiedenste Zeitreihen-Daten Für diese aktualisierte 2. Auflage wurde der gesamte Code an Python 3.6 und die neuesten Versionen der pandas-Bibliothek angepasst. Neu in dieser Auflage: Informationen zu fortgeschrittenen pandas-Tools sowie eine kurze Einführung in statsmodels und scikit-learn.

This book features novel research papers spanning many different subfields in bioinformatics and computational biology, presenting the latest research on the

practical applications to promote fruitful interactions between young researchers in different areas related to the field. Clearly, biology is increasingly becoming a science of information, requiring tools from the computational sciences. To address these challenges, we have seen the emergence of a new generation of interdisciplinary scientists with a strong background in the biological and computational sciences. PACBB'21 expects to contribute to this effort by encouraging a successful collaboration of researchers in different areas related to bioinformatics. The PACBB'21 technical program included 17 papers covering many different subfields in bioinformatics and computational biology. Therefore, this conference, held in Salamanca (Spain), definitely promotes the collaboration of scientists from different research groups and with different backgrounds (computer scientists, mathematicians, biologists) to reach breakthrough solutions for these challenges.

Learn to use powerful Python libraries for effective data processing and analysis
About This Book Learn the basic processing steps in data analysis and how to use Python in this area through supported packages, especially Numpy, Pandas, and Matplotlib Create, manipulate, and analyze your data to extract useful information to optimize your system A hands-on guide to help you learn data analysis using Python Who This Book Is For If you are a Python developer who

wants to get started with data analysis and you need a quick introductory guide to the python data analysis libraries, then this book is for you. What You Will Learn Understand the importance of data analysis and get familiar with its processing steps Get acquainted with Numpy to use with arrays and array-oriented computing in data analysis Create effective visualizations to present your data using Matplotlib Process and analyze data using the time series capabilities of Pandas Interact with different kind of database systems, such as file, disk format, Mongo, and Redis Apply the supported Python package to data analysis applications through examples Explore predictive analytics and machine learning algorithms using Scikit-learn, a Python library In Detail Data analysis is the process of applying logical and analytical reasoning to study each component of data. Python is a multi-domain, high-level, programming language. It's often used as a scripting language because of its forgiving syntax and operability with a wide variety of different eco-systems. Python has powerful standard libraries or toolkits such as Pylearn2 and Hebel, which offers a fast, reliable, cross-platform environment for data analysis. With this book, we will get you started with Python data analysis and show you what its advantages are. The book starts by introducing the principles of data analysis and supported libraries, along with NumPy basics for statistic and data processing. Next it provides an overview of

the Pandas package and uses its powerful features to solve data processing problems. Moving on, the book takes you through a brief overview of the Matplotlib API and some common plotting functions for DataFrame such as plot. Next, it will teach you to manipulate the time and data structure, and load and store data in a file or database using Python packages. The book will also teach you how to apply powerful packages in Python to process raw data into pure and helpful data using examples. Finally, the book gives you a brief overview of machine learning algorithms, that is, applying data analysis results to make decisions or build helpful products, such as recommendations and predictions using scikit-learn. Style and approach This is an easy-to-follow, step-by-step guide to get you familiar with data analysis and the libraries supported by Python. Topics are explained with real-world examples wherever required.

Explore GIS processing and learn to work with various tools and libraries in Python. Key Features Analyze and process geospatial data using Python libraries such as; Anaconda, GeoPandas Leverage new ArcGIS API to process geospatial data for the cloud. Explore various Python geospatial web and machine learning frameworks. Book Description Python comes with a host of open source libraries and tools that help you work on professional geoprocessing tasks without investing in expensive tools. This book will introduce Python

developers, both new and experienced, to a variety of new code libraries that have been developed to perform geospatial analysis, statistical analysis, and data management. This book will use examples and code snippets that will help explain how Python 3 differs from Python 2, and how these new code libraries can be used to solve age-old problems in geospatial analysis. You will begin by understanding what geoprocessing is and explore the tools and libraries that Python 3 offers. You will then learn to use Python code libraries to read and write geospatial data. You will then learn to perform geospatial queries within databases and learn PyQGIS to automate analysis within the QGIS mapping suite. Moving forward, you will explore the newly released ArcGIS API for Python and ArcGIS Online to perform geospatial analysis and create ArcGIS Online web maps. Further, you will deep dive into Python Geospatial web frameworks and learn to create a geospatial REST API. What you will learn Manage code libraries and abstract geospatial analysis techniques using Python 3. Explore popular code libraries that perform specific tasks for geospatial analysis. Utilize code libraries for data conversion, data management, web maps, and REST API creation. Learn techniques related to processing geospatial data in the cloud. Leverage features of Python 3 with geospatial databases such as PostGIS, SQL Server, and SpatiaLite. Who this book is for The audience for this book includes

students, developers, and geospatial professionals who need a reference book that covers GIS data management, analysis, and automation techniques with code libraries built in Python 3.

Computational Learning Approaches to Data Analytics in Biomedical Applications
Academic Press

If you are a Python beginner who is looking to learn the language through interesting projects, this book is for you. A basic knowledge of programming and statistics is beneficial to get the most out of the book.

This textbook grew out of notes for the ECE143 Programming for Data Analysis class that the author has been teaching at University of California, San Diego, which is a requirement for both graduate and undergraduate degrees in Machine Learning and Data Science. This book is ideal for readers with some Python programming experience. The book covers key language concepts that must be understood to program effectively, especially for data analysis applications. Certain low-level language features are discussed in detail, especially Python memory management and data structures. Using Python effectively means taking advantage of its vast ecosystem. The book discusses Python package management and how to use third-party modules as well as how to structure your own Python modules. The section on object-oriented programming explains

features of the language that facilitate common programming patterns. After developing the key Python language features, the book moves on to third-party modules that are foundational for effective data analysis, starting with Numpy. The book develops key Numpy concepts and discusses internal Numpy array data structures and memory usage. Then, the author moves onto Pandas and details its many features for data processing and alignment. Because strong visualizations are important for communicating data analysis, key modules such as Matplotlib are developed in detail, along with web-based options such as Bokeh, Holoviews, Altair, and Plotly. The text is sprinkled with many tricks-of-the-trade that help avoid common pitfalls. The author explains the internal logic embodied in the Python language so that readers can get into the Python mindset and make better design choices in their codes, which is especially helpful for newcomers to both Python and data analysis. To get the most out of this book, open a Python interpreter and type along with the many code samples. This book is a blend of penetration testing and best practices industrial automation in cybersecurity space with Python. This book will enable pentesters to take their skills to the next level by leveraging the power of Python and explaining the core concepts that will come in handy when making robust cybersecurity tools and custom exploits.

This book constitutes the proceedings of the 8th and 9th International Provenance and Annotation Workshop, IPAW 2020 and IPAW 2021 which were held as part of ProvenanceWeek in 2020 and 2021. Due to the COVID-19 pandemic, ProvenanceWeek 2020 was held as a 1-day virtual event with brief teaser talks on June 22, 2020. In 2021, the conference was held virtually during July 19-22, 2021. The 11 full papers and 12 posters and system demonstrations included in these proceedings were carefully reviewed and selected from a total of 31 submissions. They were organized in the following topical sections: provenance capture and representation; security; provenance types, inference, queries and summarization; reliability and trustworthiness; joint IPAW/TaPP poster and demonstration session.

Python programming language is an open source programming language which can be used under different operating system. Python programming redefined the programming concepts with its important features like flexibility, adaptability and reusability of codes. Python programming language has numerous libraries or modules which helps the programmer to save their time. The book starts with the overview of basic Python topics such as data structures, data types, conditions and controls, functions, lists, file handling and handling external datasets and database connections. The book also covers the topics in data science such as

graphical and chart visualization, statistical modeling, text mining and machine learning algorithms. The book uses popular libraries of Python like matplotlib, scikit-learn and numpy, to perform graphical and machine learning related tasks. Users are encouraged to refer to the author's book on "Machine Learning: An overview with the help of R software package" (ISBN- 978-1790122622) if they are familiar with R software package which is also an open source package The book requires users to download the Python version 3.0 and any of the Integrated Development Environments (IDE) such as Licolipse, Wing,PyCharm and Eric. Editor International Journal of Statistics and Medical Informatics www.ijsmi.com/book.php <https://www.amazon.com/dp/1708620281>(Paper Back) <https://www.amazon.com/DP/B081K1SD4K> (e-Book)

With examples and activities that help you achieve real results, applying calculus and statistical methods relevant to advanced data science has never been so easy Key Features Discover how most programmers use the main Python libraries when performing statistics with Python Use descriptive statistics and visualizations to answer business and scientific questions Solve complicated calculus problems, such as arc length and solids of revolution using derivatives and integrals Book Description Are you looking to start developing artificial intelligence applications? Do you need a refresher on key mathematical

concepts? Full of engaging practical exercises, *The Statistics and Calculus with Python Workshop* will show you how to apply your understanding of advanced mathematics in the context of Python. The book begins by giving you a high-level overview of the libraries you'll use while performing statistics with Python. As you progress, you'll perform various mathematical tasks using the Python programming language, such as solving algebraic functions with Python starting with basic functions, and then working through transformations and solving equations. Later chapters in the book will cover statistics and calculus concepts and how to use them to solve problems and gain useful insights. Finally, you'll study differential equations with an emphasis on numerical methods and learn about algorithms that directly calculate values of functions. By the end of this book, you'll have learned how to apply essential statistics and calculus concepts to develop robust Python applications that solve business challenges. What you will learn

- Get to grips with the fundamental mathematical functions in Python
- Perform calculations on tabular datasets using pandas
- Understand the differences between polynomials, rational functions, exponential functions, and trigonometric functions
- Use algebra techniques for solving systems of equations
- Solve real-world problems with probability
- Solve optimization problems with derivatives and integrals

Who this book is for If you are a Python programmer

who wants to develop intelligent solutions that solve challenging business problems, then this book is for you. To better grasp the concepts explained in this book, you must have a thorough understanding of advanced mathematical concepts, such as Markov chains, Euler's formula, and Runge-Kutta methods as the book only explains how these techniques and concepts can be implemented in Python.

Understand, evaluate, and visualize data About This Book Learn basic steps of data analysis and how to use Python and its packages A step-by-step guide to predictive modeling including tips, tricks, and best practices Effectively visualize a broad set of analyzed data and generate effective results Who This Book Is For This book is for Python Developers who are keen to get into data analysis and wish to visualize their analyzed data in a more efficient and insightful manner. What You Will Learn Get acquainted with NumPy and use arrays and array-oriented computing in data analysis Process and analyze data using the time-series capabilities of Pandas Understand the statistical and mathematical concepts behind predictive analytics algorithms Data visualization with Matplotlib Interactive plotting with NumPy, Scipy, and MKL functions Build financial models using Monte-Carlo simulations Create directed graphs and multi-graphs Advanced visualization with D3 In Detail You will start the course with an

introduction to the principles of data analysis and supported libraries, along with NumPy basics for statistics and data processing. Next, you will overview the Pandas package and use its powerful features to solve data-processing problems. Moving on, you will get a brief overview of the Matplotlib API .Next, you will learn to manipulate time and data structures, and load and store data in a file or database using Python packages. You will learn how to apply powerful packages in Python to process raw data into pure and helpful data using examples. You will also get a brief overview of machine learning algorithms, that is, applying data analysis results to make decisions or building helpful products such as recommendations and predictions using Scikit-learn. After this, you will move on to a data analytics specialization—predictive analytics. Social media and IOT have resulted in an avalanche of data. You will get started with predictive analytics using Python. You will see how to create predictive models from data. You will get balanced information on statistical and mathematical concepts, and implement them in Python using libraries such as Pandas, scikit-learn, and NumPy. You'll learn more about the best predictive modeling algorithms such as Linear Regression, Decision Tree, and Logistic Regression. Finally, you will master best practices in predictive modeling. After this, you will get all the practical guidance you need to help you on the journey to effective data

visualization. Starting with a chapter on data frameworks, which explains the transformation of data into information and eventually knowledge, this path subsequently cover the complete visualization process using the most popular Python libraries with working examples 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: Getting Started with Python Data Analysis, Phuong Vo.T.H & Martin Czygan Learning Predictive Analytics with Python, Ashish Kumar Mastering Python Data Visualization, Kirthi Raman Style and approach The course acts as a step-by-step guide to get you familiar with data analysis and the libraries supported by Python with the help of real-world examples and datasets. It also helps you gain practical insights into predictive modeling by implementing predictive-analytics algorithms on public datasets with Python. The course offers a wealth of practical guidance to help you on this journey to data visualization

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