

# Text Analytics With Python A Practical Real World Approach

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## **Natural Language Processing Recipes** - Akshay Kulkarni 2019-01-29

Implement natural language processing applications with Python using a problem-solution approach. This book has numerous coding exercises that will help you to quickly deploy natural language processing techniques, such as text classification, parts of speech identification, topic modeling, text summarization, text generation, entity extraction, and sentiment analysis. Natural Language Processing Recipes starts by offering solutions for cleaning and preprocessing text data and ways to analyze it with advanced algorithms. You'll see practical applications of the semantic as well as syntactic analysis of text, as well as complex natural language processing approaches that involve text normalization, advanced preprocessing, POS tagging, and sentiment analysis. You will also learn various applications of machine learning and deep learning in natural language processing. By using the recipes in this book, you will have a toolbox of solutions to apply to your own projects in the real world, making your development time quicker and more efficient. What You Will Learn Apply NLP techniques using Python libraries such as NLTK, TextBlob, spaCy, Stanford CoreNLP, and many more Implement the concepts of information retrieval, text summarization, sentiment analysis, and other advanced natural language processing techniques. Identify machine learning and deep learning techniques for natural language processing and natural language generation problems Who This Book Is For Data scientists who want to refresh and learn various concepts of natural language processing through coding exercises.

## **SAS Text Analytics for Business Applications** - Teresa Jade 2019-03-29

Extract actionable insights from text and unstructured data. Information extraction is the task of automatically extracting structured information from unstructured or semi-structured text. SAS Text Analytics for Business Applications: Concept Rules for Information Extraction Models focuses on this key element of natural language processing (NLP) and provides real-world guidance on the effective application of text analytics. Using scenarios and data based on business cases across many different domains and industries, the book includes many helpful tips and best practices from SAS text analytics experts to ensure fast, valuable insight from your textual data. Written for a broad audience of beginning, intermediate, and advanced users of SAS text analytics products, including SAS Visual Text Analytics, SAS Contextual Analysis, and SAS Enterprise Content Categorization, this book provides a solid technical reference. You will learn the SAS information extraction toolkit, broaden your knowledge of rule-based methods, and answer new business questions. As your practical experience grows, this book will serve as a reference to deepen your expertise.

## **Data Analysis for Business, Economics, and Policy** - Gábor Békés 2021-05-06

A comprehensive textbook on data analysis for business, applied economics and public policy that uses case studies with real-world data.

## **Blueprints for Text Analytics Using Python** - Jens Albrecht 2020-12-04

Turning text into valuable information is essential for businesses looking to gain a competitive advantage. With recent improvements in natural language processing (NLP), users now have many options for solving complex challenges. But it's not always clear which NLP tools or libraries

would work for a business's needs, or which techniques you should use and in what order. This practical book provides data scientists and developers with blueprints for best practice solutions to common tasks in text analytics and natural language processing. Authors Jens Albrecht, Sidharth Ramachandran, and Christian Winkler provide real-world case studies and detailed code examples in Python to help you get started quickly. Extract data from APIs and web pages Prepare textual data for statistical analysis and machine learning Use machine learning for classification, topic modeling, and summarization Explain AI models and classification results Explore and visualize semantic similarities with word embeddings Identify customer sentiment in product reviews Create a knowledge graph based on named entities and their relations

## **Blueprints for Text Analytics Using Python** - Jens Albrecht 2021-01-12

Turning text into valuable information is essential for many businesses looking to gain a competitive advantage. There have many improvements in natural language processing and users have a lot of options when choosing to work on a problem. However, it's not always clear which NLP tools or libraries would work for a business use--or which techniques you should use and in what order. This practical book provides theoretical background and real-world case studies with detailed code examples to help developers and data scientists obtain insight from text online. Authors Jens Albrecht, Sidharth Ramachandran, and Christian Winkler use blueprints for text-related problems that apply state-of-the-art machine learning methods in Python. If you have a fundamental understanding of statistics and machine learning along with basic programming experience in Python, you're ready to get started. You'll learn how to: Crawl and clean then explore and visualize textual data in different formats Preprocess and vectorize text for machine learning Apply methods for classification, topic analysis, summarization, and knowledge extraction Use semantic word embeddings and deep learning approaches for complex problems Work with Python NLP libraries like spaCy, NLTK, and Gensim in combination with scikit-learn, Pandas, and PyTorch

## **Deep Learning for Coders with fastai and PyTorch** - Jeremy Howard 2020-06-29

Deep learning is often viewed as the exclusive domain of math PhDs and big tech companies. But as this hands-on guide demonstrates, programmers comfortable with Python can achieve impressive results in deep learning with little math background, small amounts of data, and minimal code. How? With fastai, the first library to provide a consistent interface to the most frequently used deep learning applications. Authors Jeremy Howard and Sylvain Gugger, the creators of fastai, show you how to train a model on a wide range of tasks using fastai and PyTorch. You'll also dive progressively further into deep learning theory to gain a complete understanding of the algorithms behind the scenes. Train models in computer vision, natural language processing, tabular data, and collaborative filtering Learn the latest deep learning techniques that matter most in practice Improve accuracy, speed, and reliability by understanding how deep learning models work Discover how to turn your models into web applications Implement deep learning algorithms from scratch Consider the ethical implications of your work Gain insight from the foreword by PyTorch cofounder, Soumith Chintala

### **Text Analytics with Python** - Dipanjan Sarkar 2016-11-30

Derive useful insights from your data using Python. You will learn both basic and advanced concepts, including text and language syntax, structure, and semantics. You will focus on algorithms and techniques, such as text classification, clustering, topic modeling, and text summarization. Text Analytics with Python teaches you the techniques related to natural language processing and text analytics, and you will gain the skills to know which technique is best suited to solve a particular problem. You will look at each technique and algorithm with both a bird's eye view to understand how it can be used as well as with a microscopic view to understand the mathematical concepts and to implement them to solve your own problems. What You Will Learn: Understand the major concepts and techniques of natural language processing (NLP) and text analytics, including syntax and structure Build a text classification system to categorize news articles, analyze app or game reviews using topic modeling and text summarization, and cluster popular movie synopses and analyze the sentiment of movie reviews Implement Python and popular open source libraries in NLP and text analytics, such as the natural language toolkit (nltk), gensim, scikit-learn, spaCy and Pattern Who This Book Is For : IT professionals, analysts, developers, linguistic experts, data scientists, and anyone with a keen interest in linguistics, analytics, and generating insights from textual data

### Modern Survey Analysis - Walter R. Paczkowski

This book develops survey data analysis tools in Python, to create and analyze cross-tab tables and data visuals, weight data, perform hypothesis tests, and handle special survey questions such as Check-all-that-Apply. In addition, the basics of Bayesian data analysis and its Python implementation are presented. Since surveys are widely used as the primary method to collect data, and ultimately information, on attitudes, interests, and opinions of customers and constituents, these tools are vital for private or public sector policy decisions. As a compact volume, this book uses case studies to illustrate methods of analysis essential for those who work with survey data in either sector. It focuses on two overarching objectives: Demonstrate how to extract actionable, insightful, and useful information from survey data; and Introduce Python and Pandas for analyzing survey data.

### **Text Analysis in Python for Social Scientists** - Dirk Hovy 2021-01-21

Text is everywhere, and it is a fantastic resource for social scientists. However, because it is so abundant, and because language is so variable, it is often difficult to extract the information we want. There is a whole subfield of AI concerned with text analysis (natural language processing). Many of the basic analysis methods developed are now readily available as Python implementations. This Element will teach you when to use which method, the mathematical background of how it works, and the Python code to implement it.

### **Practical Data Analysis** - Dhiraj Bhuyan 2019-11-30

"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>

### **Practical Social Network Analysis with Python** - Krishna Raj P.M. 2018-08-25

This book focuses on social network analysis from a computational perspective, introducing readers to the fundamental aspects of network theory by discussing the various metrics used to measure the social network. It covers different forms of graphs and their analysis using techniques like filtering, clustering and rule mining, as well as important theories like small world

phenomenon. It also presents methods for identifying influential nodes in the network and information dissemination models. Further, it uses examples to explain the tools for visualising large-scale networks, and explores emerging topics like big data and deep learning in the context of social network analysis. With the Internet becoming part of our everyday lives, social networking tools are used as the primary means of communication. And as the volume and speed of such data is increasing rapidly, there is a need to apply computational techniques to interpret and understand it. Moreover, relationships in molecular structures, co-authors in scientific journals, and developers in a software community can also be understood better by visualising them as networks. This book brings together the theory and practice of social network analysis and includes mathematical concepts, computational techniques and examples from the real world to offer readers an overview of this domain.

### Text Mining in Practice with R - Ted Kwartler 2017-07-24

A reliable, cost-effective approach to extracting priceless business information from all sources of text Excavating actionable business insights from data is a complex undertaking, and that complexity is magnified by an order of magnitude when the focus is on documents and other text information. This book takes a practical, hands-on approach to teaching you a reliable, cost-effective approach to mining the vast, untold riches buried within all forms of text using R. Author Ted Kwartler clearly describes all of the tools needed to perform text mining and shows you how to use them to identify practical business applications to get your creative text mining efforts started right away. With the help of numerous real-world examples and case studies from industries ranging from healthcare to entertainment to telecommunications, he demonstrates how to execute an array of text mining processes and functions, including sentiment scoring, topic modelling, predictive modelling, extracting clickbait from headlines, and more. You'll learn how to: Identify actionable social media posts to improve customer service Use text mining in HR to identify candidate perceptions of an organisation, match job descriptions with resumes, and more Extract priceless information from virtually all digital and print sources, including the news media, social media sites, PDFs, and even JPEG and GIF image files Make text mining an integral component of marketing in order to identify brand evangelists, impact customer propensity modelling, and much more Most companies' data mining efforts focus almost exclusively on numerical and categorical data, while text remains a largely untapped resource. Especially in a global marketplace where being first to identify and respond to customer needs and expectations imparts an unbeatable competitive advantage, text represents a source of immense potential value. Unfortunately, there is no reliable, cost-effective technology for extracting analytical insights from the huge and ever-growing volume of text available online and other digital sources, as well as from paper documents—until now.

### **Practical Text Analytics** - Murugan Anandarajan 2018-10-19

This book introduces text analytics as a valuable method for deriving insights from text data. Unlike other text analytics publications, Practical Text Analytics: Maximizing the Value of Text Data makes technical concepts accessible to those without extensive experience in the field. Using text analytics, organizations can derive insights from content such as emails, documents, and social media. Practical Text Analytics is divided into five parts. The first part introduces text analytics, discusses the relationship with content analysis, and provides a general overview of text mining methodology. In the second part, the authors discuss the practice of text analytics, including data preparation and the overall planning process. The third part covers text analytics techniques such as cluster analysis, topic models, and machine learning. In the fourth part of the book, readers learn about techniques used to communicate insights from text analysis, including data storytelling. The final part of Practical Text Analytics offers examples of the application of software programs for text analytics, enabling readers to mine their own text data to uncover information.

### Supervised Machine Learning for Text Analysis in R - Emil Hvitfeldt 2021-10-22

Text data is important for many domains, from healthcare to marketing to the digital humanities,

but specialized approaches are necessary to create features for machine learning from language. Supervised Machine Learning for Text Analysis in R explains how to preprocess text data for modeling, train models, and evaluate model performance using tools from the tidyverse and tidymodels ecosystem. Models like these can be used to make predictions for new observations, to understand what natural language features or characteristics contribute to differences in the output, and more. If you are already familiar with the basics of predictive modeling, use the comprehensive, detailed examples in this book to extend your skills to the domain of natural language processing. This book provides practical guidance and directly applicable knowledge for data scientists and analysts who want to integrate unstructured text data into their modeling pipelines. Learn how to use text data for both regression and classification tasks, and how to apply more straightforward algorithms like regularized regression or support vector machines as well as deep learning approaches. Natural language must be dramatically transformed to be ready for computation, so we explore typical text preprocessing and feature engineering steps like tokenization and word embeddings from the ground up. These steps influence model results in ways we can measure, both in terms of model metrics and other tangible consequences such as how fair or appropriate model results are.

**Natural Language Processing and Computational Linguistics** - Bhargav Srinivasa-Desikan 2018-06-29

Work with Python and powerful open source tools such as Gensim and spaCy to perform modern text analysis, natural language processing, and computational linguistics algorithms. Key Features Discover the open source Python text analysis ecosystem, using spaCy, Gensim, scikit-learn, and Keras Hands-on text analysis with Python, featuring natural language processing and computational linguistics algorithms Learn deep learning techniques for text analysis Book Description Modern text analysis is now very accessible using Python and open source tools, so discover how you can now perform modern text analysis in this era of textual data. This book shows you how to use natural language processing, and computational linguistics algorithms, to make inferences and gain insights about data you have. These algorithms are based on statistical machine learning and artificial intelligence techniques. The tools to work with these algorithms are available to you right now - with Python, and tools like Gensim and spaCy. You'll start by learning about data cleaning, and then how to perform computational linguistics from first concepts. You're then ready to explore the more sophisticated areas of statistical NLP and deep learning using Python, with realistic language and text samples. You'll learn to tag, parse, and model text using the best tools. You'll gain hands-on knowledge of the best frameworks to use, and you'll know when to choose a tool like Gensim for topic models, and when to work with Keras for deep learning. This book balances theory and practical hands-on examples, so you can learn about and conduct your own natural language processing projects and computational linguistics. You'll discover the rich ecosystem of Python tools you have available to conduct NLP - and enter the interesting world of modern text analysis. What you will learn Why text analysis is important in our modern age Understand NLP terminology and get to know the Python tools and datasets Learn how to pre-process and clean textual data Convert textual data into vector space representations Using spaCy to process text Train your own NLP models for computational linguistics Use statistical learning and Topic Modeling algorithms for text, using Gensim and scikit-learn Employ deep learning techniques for text analysis using Keras Who this book is for This book is for you if you want to dive in, hands-first, into the interesting world of text analysis and NLP, and you're ready to work with the rich Python ecosystem of tools and datasets waiting for you!

**Intelligent Systems Design and Applications** - Ajith Abraham 2022-03-26

This book highlights recent research on intelligent systems and nature-inspired computing. It presents 132 selected papers from the 21st International Conference on Intelligent Systems Design and Applications (ISDA 2021), which was held online. The ISDA is a premier conference in the field of computational intelligence, and the latest installment brought together researchers, engineers and practitioners whose work involves intelligent systems and their applications in

industry. Including contributions by authors from 34 countries, the book offers a valuable reference guide for all researchers, students and practitioners in the fields of Computer Science and Engineering.

**Python for Data Analysis** - Wes McKinney 2017-09-25

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 Analysis with Python** - David Taieb 2018-12-31

Learn a modern approach to data analysis using Python to harness the power of programming and AI across your data. Detailed case studies bring this modern approach to life across visual data, social media, graph algorithms, and time series analysis. Key Features Bridge your data analysis with the power of programming, complex algorithms, and AI Use Python and its extensive libraries to power your way to new levels of data insight Work with AI algorithms, TensorFlow, graph algorithms, NLP, and financial time series Explore this modern approach across with key industry case studies and hands-on projects Book Description Data Analysis with Python offers a modern approach to data analysis so that you can work with the latest and most powerful Python tools, AI techniques, and open source libraries. Industry expert David Taieb shows you how to bridge data science with the power of programming and algorithms in Python. You'll be working with complex algorithms, and cutting-edge AI in your data analysis. Learn how to analyze data with hands-on examples using Python-based tools and Jupyter Notebook. You'll find the right balance of theory and practice, with extensive code files that you can integrate right into your own data projects. Explore the power of this approach to data analysis by then working with it across key industry case studies. Four fascinating and full projects connect you to the most critical data analysis challenges you're likely to meet in today. The first of these is an image recognition application with TensorFlow - embracing the importance today of AI in your data analysis. The second industry project analyses social media trends, exploring big data issues and AI approaches to natural language processing. The third case study is a financial portfolio analysis application that engages you with time series analysis - pivotal to many data science applications today. The fourth industry use case dives you into graph algorithms and the power of programming in modern data science. You'll wrap up with a thoughtful look at the future of data science and how it will harness the power of algorithms and artificial intelligence. What you will learn A new toolset that has been carefully crafted to meet for your data analysis challenges Full and detailed case studies of the toolset across several of today's key industry contexts Become super productive with a new toolset across Python and Jupyter Notebook Look into the future of data science and which directions to develop your skills next Who this book is for This book is for developers wanting to bridge the gap between them and data scientists. Introducing PixieDust from its creator, the book is a great desk companion for the accomplished Data Scientist. Some fluency in data interpretation and visualization is assumed. It will be helpful to have some knowledge of Python, using Python libraries, and some proficiency in web development.

**Introduction to Data Science** - Laura Igual 2017-02-22

This accessible and classroom-tested textbook/reference presents an introduction to the

fundamentals of the emerging and interdisciplinary field of data science. The coverage spans key concepts adopted from statistics and machine learning, useful techniques for graph analysis and parallel programming, and the practical application of data science for such tasks as building recommender systems or performing sentiment analysis. Topics and features: provides numerous practical case studies using real-world data throughout the book; supports understanding through hands-on experience of solving data science problems using Python; describes techniques and tools for statistical analysis, machine learning, graph analysis, and parallel programming; reviews a range of applications of data science, including recommender systems and sentiment analysis of text data; provides supplementary code resources and data at an associated website.

*Python Text Mining* - Alexandra George 2022-03-26

Make use of the most advanced machine learning techniques to perform NLP and feature extraction

**KEY FEATURES**

- Learn about pre-trained models, deep learning, and transfer learning for NLP applications.
- All-in-one knowledge guide for feature engineering, NLP models, and pre-processing techniques.
- Includes use cases, enterprise deployments, and a range of Python based demonstrations.

**DESCRIPTION** Natural Language Processing (NLP) has proven to be useful in a wide range of applications. Because of this, extracting information from text data sets requires attention to methods, techniques, and approaches. 'Python Text Mining' includes a number of application cases, demonstrations, and approaches that will help you deepen your understanding of feature extraction from data sets. You will get an understanding of good information retrieval, a critical step in accomplishing many machine learning tasks. We will learn to classify text into discrete segments solely on the basis of model properties, not on the basis of user-supplied criteria. The book will walk you through many methodologies, such as classification, that will enable you to rapidly construct recommendation engines, subject segmentation, and sentiment analysis applications. Toward the end, we will also look at machine translation and transfer learning. By the end of this book, you'll know exactly how to gather web-based text, process it, and then apply it to the development of NLP applications.

**WHAT YOU WILL LEARN**

- Practice how to process raw data and transform it into a usable format.
- Best techniques to convert text to vectors and then transform into word embeddings.
- Unleash ML and DL techniques to perform sentiment analysis.
- Build modern recommendation engines using classification techniques.

**WHO THIS BOOK IS FOR** This book is a good place to start with examples, explanations, and exercises for anyone interested in learning more about advanced text mining and natural language processing techniques. It is suggested but not required that you have some prior programming experience.

**TABLE OF CONTENTS**

1. Basic Text Processing Techniques
2. Text to Numbers
3. Word Embeddings
4. Topic Modeling
5. Unsupervised Sentiment Classification
6. Text Classification Using ML
7. Text Classification Using Deep learning
8. Recommendation engine
9. Transfer Learning

*Humanities Data Analysis* - Folgert Karsdorp 2021-01-12

A practical guide to data-intensive humanities research using the Python programming language

The use of quantitative methods in the humanities and related social sciences has increased considerably in recent years, allowing researchers to discover patterns in a vast range of source materials. Despite this growth, there are few resources addressed to students and scholars who wish to take advantage of these powerful tools. *Humanities Data Analysis* offers the first intermediate-level guide to quantitative data analysis for humanities students and scholars using the Python programming language. This practical textbook, which assumes a basic knowledge of Python, teaches readers the necessary skills for conducting humanities research in the rapidly developing digital environment. The book begins with an overview of the place of data science in the humanities, and proceeds to cover data carpentry: the essential techniques for gathering, cleaning, representing, and transforming textual and tabular data. Then, drawing from real-world, publicly available data sets that cover a variety of scholarly domains, the book delves into detailed case studies. Focusing on textual data analysis, the authors explore such diverse topics as network analysis, genre theory, onomastics, literacy, author attribution, mapping, stylometry,

topic modeling, and time series analysis. Exercises and resources for further reading are provided at the end of each chapter. An ideal resource for humanities students and scholars aiming to take their Python skills to the next level, *Humanities Data Analysis* illustrates the benefits that quantitative methods can bring to complex research questions. Appropriate for advanced undergraduates, graduate students, and scholars with a basic knowledge of Python

Applicable to many humanities disciplines, including history, literature, and sociology

Offers real-world case studies using publicly available data sets

Provides exercises at the end of each chapter for students to test acquired skills

Emphasizes visual storytelling via data visualizations

**Practical Web Scraping for Data Science** - Seppe vanden Broucke 2018-04-18

This book provides a complete and modern guide to web scraping, using Python as the programming language, without glossing over important details or best practices. Written with a data science audience in mind, the book explores both scraping and the larger context of web technologies in which it operates, to ensure full understanding. The authors recommend web scraping as a powerful tool for any data scientist's arsenal, as many data science projects start by obtaining an appropriate data set. Starting with a brief overview on scraping and real-life use cases, the authors explore the core concepts of HTTP, HTML, and CSS to provide a solid foundation. Along with a quick Python primer, they cover Selenium for JavaScript-heavy sites, and web crawling in detail. The book finishes with a recap of best practices and a collection of examples that bring together everything you've learned and illustrate various data science use cases.

**What You'll Learn**

- Leverage well-established best practices and commonly-used Python packages
- Handle today's web, including JavaScript, cookies, and common web scraping mitigation techniques
- Understand the managerial and legal concerns regarding web scraping

**Who This Book is For** A data science oriented audience that is probably already familiar with Python or another programming language or analytical toolkit (R, SAS, SPSS, etc). Students or instructors in university courses may also benefit. Readers unfamiliar with Python will appreciate a quick Python primer in chapter 1 to catch up with the basics and provide pointers to other guides as well.

*Practical Natural Language Processing with Python* - Mathangi Sri 2020-12-01

Work with natural language tools and techniques to solve real-world problems. This book focuses on how natural language processing (NLP) is used in various industries. Each chapter describes the problem and solution strategy, then provides an intuitive explanation of how different algorithms work and a deeper dive on code and output in Python. *Practical Natural Language Processing with Python* follows a case study-based approach. Each chapter is devoted to an industry or a use case, where you address the real business problems in that industry and the various ways to solve them. You start with various types of text data before focusing on the customer service industry, the type of data available in that domain, and the common NLP problems encountered. Here you cover the bag-of-words model supervised learning technique as you try to solve the case studies. Similar depth is given to other use cases such as online reviews, bots, finance, and so on. As you cover the problems in these industries you'll also cover sentiment analysis, named entity recognition, word2vec, word similarities, topic modeling, deep learning, and sequence to sequence modelling. By the end of the book, you will be able to handle all types of NLP problems independently. You will also be able to think in different ways to solve language problems. Code and techniques for all the problems are provided in the book.

**What You Will Learn**

- Build an understanding of NLP problems in industry
- Gain the know-how to solve a typical NLP problem using language-based models and machine learning
- Discover the best methods to solve a business problem using NLP - the tried and tested ones
- Understand the business problems that are tough to solve

**Who This Book Is For** Analytics and data science professionals who want to kick start NLP, and NLP professionals who want to get new ideas to solve the problems at hand.

**Text Analytics** - John Atkinson-Abutridy 2022-05-03

*Text Analytics: An Introduction to the Science and Applications of Unstructured Information Analysis* is a concise and accessible introduction to the science and applications of text analytics (or text mining), which enables automatic knowledge discovery from unstructured information

sources, for both industrial and academic purposes. The book introduces the main concepts, models, and computational techniques that enable the reader to solve real decision-making problems arising from textual and/or documentary sources. Features: Easy-to-follow step-by-step concepts and methods Every chapter is introduced in a very gentle and intuitive way so students can understand the WHYs, WHAT-IFs, WHAT-IS-THIS-FORs, HOWs, etc. by themselves Practical programming exercises in Python for each chapter Includes theory and practice for every chapter, summaries, practical coding exercises for target problems, QA, and sample code and data available for download at <https://www.routledge.com/Atkinson-Abutridy/p/book/9781032249797>

**Blueprints for Text Analytics Using Python** - Jens Albrecht 2020-12-04

Turning text into valuable information is essential for businesses looking to gain a competitive advantage. With recent improvements in natural language processing (NLP), users now have many options for solving complex challenges. But it's not always clear which NLP tools or libraries would work for a business's needs, or which techniques you should use and in what order. This practical book provides data scientists and developers with blueprints for best practice solutions to common tasks in text analytics and natural language processing. Authors Jens Albrecht, Sidharth Ramachandran, and Christian Winkler provide real-world case studies and detailed code examples in Python to help you get started quickly. Extract data from APIs and web pages Prepare textual data for statistical analysis and machine learning Use machine learning for classification, topic modeling, and summarization Explain AI models and classification results Explore and visualize semantic similarities with word embeddings Identify customer sentiment in product reviews Create a knowledge graph based on named entities and their relations

Practical Natural Language Processing - Sowmya Vajjala 2020-06-17

Many books and courses tackle natural language processing (NLP) problems with toy use cases and well-defined datasets. But if you want to build, iterate, and scale NLP systems in a business setting and tailor them for particular industry verticals, this is your guide. Software engineers and data scientists will learn how to navigate the maze of options available at each step of the journey. Through the course of the book, authors Sowmya Vajjala, Bodhisattwa Majumder, Anuj Gupta, and Harshit Surana will guide you through the process of building real-world NLP solutions embedded in larger product setups. You'll learn how to adapt your solutions for different industry verticals such as healthcare, social media, and retail. With this book, you'll: Understand the wide spectrum of problem statements, tasks, and solution approaches within NLP Implement and evaluate different NLP applications using machine learning and deep learning methods Fine-tune your NLP solution based on your business problem and industry vertical Evaluate various algorithms and approaches for NLP product tasks, datasets, and stages Produce software solutions following best practices around release, deployment, and DevOps for NLP systems Understand best practices, opportunities, and the roadmap for NLP from a business and product leader's perspective

**Python 3 Text Processing with NLTK 3 Cookbook** - Jacob Perkins 2014-08-26

This book is intended for Python programmers interested in learning how to do natural language processing. Maybe you've learned the limits of regular expressions the hard way, or you've realized that human language cannot be deterministically parsed like a computer language. Perhaps you have more text than you know what to do with, and need automated ways to analyze and structure that text. This Cookbook will show you how to train and use statistical language models to process text in ways that are practically impossible with standard programming tools. A basic knowledge of Python and the basic text processing concepts is expected. Some experience with regular expressions will also be helpful.

**R for Data Science** - Hadley Wickham 2016-12-12

Learn how to use R to turn raw data into insight, knowledge, and understanding. This book introduces you to R, RStudio, and the tidyverse, a collection of R packages designed to work together to make data science fast, fluent, and fun. Suitable for readers with no previous programming experience, R for Data Science is designed to get you doing data science as quickly

as possible. Authors Hadley Wickham and Garrett Golemund guide you through the steps of importing, wrangling, exploring, and modeling your data and communicating the results. You'll get a complete, big-picture understanding of the data science cycle, along with basic tools you need to manage the details. Each section of the book is paired with exercises to help you practice what you've learned along the way. You'll learn how to: Wrangle—transform your datasets into a form convenient for analysis Program—learn powerful R tools for solving data problems with greater clarity and ease Explore—examine your data, generate hypotheses, and quickly test them Model—provide a low-dimensional summary that captures true "signals" in your dataset Communicate—learn R Markdown for integrating prose, code, and results

Text Analytics with Python - Dipanjan Sarkar 2019-05-21

Leverage Natural Language Processing (NLP) in Python and learn how to set up your own robust environment for performing text analytics. This second edition has gone through a major revamp and introduces several significant changes and new topics based on the recent trends in NLP. You'll see how to use the latest state-of-the-art frameworks in NLP, coupled with machine learning and deep learning models for supervised sentiment analysis powered by Python to solve actual case studies. Start by reviewing Python for NLP fundamentals on strings and text data and move on to engineering representation methods for text data, including both traditional statistical models and newer deep learning-based embedding models. Improved techniques and new methods around parsing and processing text are discussed as well. Text summarization and topic models have been overhauled so the book showcases how to build, tune, and interpret topic models in the context of an interest dataset on NIPS conference papers. Additionally, the book covers text similarity techniques with a real-world example of movie recommenders, along with sentiment analysis using supervised and unsupervised techniques. There is also a chapter dedicated to semantic analysis where you'll see how to build your own named entity recognition (NER) system from scratch. While the overall structure of the book remains the same, the entire code base, modules, and chapters has been updated to the latest Python 3.x release. What You'll Learn • Understand NLP and text syntax, semantics and structure • Discover text cleaning and feature engineering • Review text classification and text clustering • Assess text summarization and topic models • Study deep learning for NLP Who This Book Is For IT professionals, data analysts, developers, linguistic experts, data scientists and engineers and basically anyone with a keen interest in linguistics, analytics and generating insights from textual data.

**Introducing Data Science** - Davy Cielen 2016-05-02

Summary Introducing Data Science teaches you how to accomplish the fundamental tasks that occupy data scientists. Using the Python language and common Python libraries, you'll experience firsthand the challenges of dealing with data at scale and gain a solid foundation in data science. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Many companies need developers with data science skills to work on projects ranging from social media marketing to machine learning. Discovering what you need to learn to begin a career as a data scientist can seem bewildering. This book is designed to help you get started. About the Book Introducing Data Science Introducing Data Science explains vital data science concepts and teaches you how to accomplish the fundamental tasks that occupy data scientists. You'll explore data visualization, graph databases, the use of NoSQL, and the data science process. You'll use the Python language and common Python libraries as you experience firsthand the challenges of dealing with data at scale. Discover how Python allows you to gain insights from data sets so big that they need to be stored on multiple machines, or from data moving so quickly that no single machine can handle it. This book gives you hands-on experience with the most popular Python data science libraries, Scikit-learn and StatsModels. After reading this book, you'll have the solid foundation you need to start a career in data science. What's Inside Handling large data Introduction to machine learning Using Python to work with data Writing data science algorithms About the Reader This book assumes you're comfortable reading code in Python or a similar language, such as C, Ruby, or JavaScript. No prior experience

with data science is required. About the Authors Davy Cielen, Arno D. B. Meysman, and Mohamed Ali are the founders and managing partners of Optimately and Maiton, where they focus on developing data science projects and solutions in various sectors. Table of Contents Data science in a big data world The data science process Machine learning Handling large data on a single computer First steps in big data Join the NoSQL movement The rise of graph databases Text mining and text analytics Data visualization to the end user

#### **Artificial Intelligence with Python** - Prateek Joshi 2017-01-27

Build real-world Artificial Intelligence applications with Python to intelligently interact with the world around you About This Book Step into the amazing world of intelligent apps using this comprehensive guide Enter the world of Artificial Intelligence, explore it, and create your own applications Work through simple yet insightful examples that will get you up and running with Artificial Intelligence in no time Who This Book Is For This book is for Python developers who want to build real-world Artificial Intelligence applications. This book is friendly to Python beginners, but being familiar with Python would be useful to play around with the code. It will also be useful for experienced Python programmers who are looking to use Artificial Intelligence techniques in their existing technology stacks. What You Will Learn Realize different classification and regression techniques Understand the concept of clustering and how to use it to automatically segment data See how to build an intelligent recommender system Understand logic programming and how to use it Build automatic speech recognition systems Understand the basics of heuristic search and genetic programming Develop games using Artificial Intelligence Learn how reinforcement learning works Discover how to build intelligent applications centered on images, text, and time series data See how to use deep learning algorithms and build applications based on it In Detail Artificial Intelligence is becoming increasingly relevant in the modern world where everything is driven by technology and data. It is used extensively across many fields such as search engines, image recognition, robotics, finance, and so on. We will explore various real-world scenarios in this book and you'll learn about various algorithms that can be used to build Artificial Intelligence applications. During the course of this book, you will find out how to make informed decisions about what algorithms to use in a given context. Starting from the basics of Artificial Intelligence, you will learn how to develop various building blocks using different data mining techniques. You will see how to implement different algorithms to get the best possible results, and will understand how to apply them to real-world scenarios. If you want to add an intelligence layer to any application that's based on images, text, stock market, or some other form of data, this exciting book on Artificial Intelligence will definitely be your guide! Style and approach This highly practical book will show you how to implement Artificial Intelligence. The book provides multiple examples enabling you to create smart applications to meet the needs of your organization. In every chapter, we explain an algorithm, implement it, and then build a smart application.

#### **Applied Text Analysis with Python** - Benjamin Bengfort 2018-06-11

From news and speeches to informal chatter on social media, natural language is one of the richest and most underutilized sources of data. Not only does it come in a constant stream, always changing and adapting in context; it also contains information that is not conveyed by traditional data sources. The key to unlocking natural language is through the creative application of text analytics. This practical book presents a data scientist's approach to building language-aware products with applied machine learning. You'll learn robust, repeatable, and scalable techniques for text analysis with Python, including contextual and linguistic feature engineering, vectorization, classification, topic modeling, entity resolution, graph analysis, and visual steering. By the end of the book, you'll be equipped with practical methods to solve any number of complex real-world problems. Preprocess and vectorize text into high-dimensional feature representations Perform document classification and topic modeling Steer the model selection process with visual diagnostics Extract key phrases, named entities, and graph structures to reason about data in text Build a dialog framework to enable chatbots and language-driven interaction Use Spark to scale processing power and neural networks to scale model complexity

#### **Natural Language Processing with Python** - Steven Bird 2009-06-12

This book offers a highly accessible introduction to natural language processing, the field that supports a variety of language technologies, from predictive text and email filtering to automatic summarization and translation. With it, you'll learn how to write Python programs that work with large collections of unstructured text. You'll access richly annotated datasets using a comprehensive range of linguistic data structures, and you'll understand the main algorithms for analyzing the content and structure of written communication. Packed with examples and exercises, Natural Language Processing with Python will help you: Extract information from unstructured text, either to guess the topic or identify "named entities" Analyze linguistic structure in text, including parsing and semantic analysis Access popular linguistic databases, including WordNet and treebanks Integrate techniques drawn from fields as diverse as linguistics and artificial intelligence This book will help you gain practical skills in natural language processing using the Python programming language and the Natural Language Toolkit (NLTK) open source library. If you're interested in developing web applications, analyzing multilingual news sources, or documenting endangered languages -- or if you're simply curious to have a programmer's perspective on how human language works -- you'll find Natural Language Processing with Python both fascinating and immensely useful.

#### **Advances in Computational Intelligence** - Lourdes Martínez-Villaseñor 2020-10-07

The two-volume set LNAI 12468 and 12469 constitutes the proceedings of the 19th Mexican International Conference on Artificial Intelligence, MICAI 2020, held in Mexico City, Mexico, in October 2020. The total of 77 papers presented in these two volumes was carefully reviewed and selected from 186 submissions. The contributions are organized in topical as follows: Part I: machine and deep learning, evolutionary and metaheuristic algorithms, and soft computing. Part II: natural language processing, image processing and pattern recognition, and intelligent applications and robotics.

#### **Advanced Computing Strategies for Engineering** - Ian F. C. Smith 2018-06-09

This double volume set ( LNAI 10863-10864) constitutes the refereed proceedings of the 25th International Workshop, EG-ICE 2018, held in Lausanne, Switzerland, in June 2018. The 58 papers presented in this volume were carefully reviewed and selected from 108 submissions. The papers are organized in topical sections on Advanced Computing in Engineering, Computer Supported Construction Management, Life-Cycle Design Support, Monitoring and Control Algorithms in Engineering, and BIM and Engineering Ontologies.

#### **Practical Machine Learning with Python** - Dipanjan Sarkar 2017-12-20

Master the essential skills needed to recognize and solve complex problems with machine learning and deep learning. Using real-world examples that leverage the popular Python machine learning ecosystem, this book is your perfect companion for learning the art and science of machine learning to become a successful practitioner. The concepts, techniques, tools, frameworks, and methodologies used in this book will teach you how to think, design, build, and execute machine learning systems and projects successfully. Practical Machine Learning with Python follows a structured and comprehensive three-tiered approach packed with hands-on examples and code. Part 1 focuses on understanding machine learning concepts and tools. This includes machine learning basics with a broad overview of algorithms, techniques, concepts and applications, followed by a tour of the entire Python machine learning ecosystem. Brief guides for useful machine learning tools, libraries and frameworks are also covered. Part 2 details standard machine learning pipelines, with an emphasis on data processing analysis, feature engineering, and modeling. You will learn how to process, wrangle, summarize and visualize data in its various forms. Feature engineering and selection methodologies will be covered in detail with real-world datasets followed by model building, tuning, interpretation and deployment. Part 3 explores multiple real-world case studies spanning diverse domains and industries like retail, transportation, movies, music, marketing, computer vision and finance. For each case study, you will learn the application of various machine learning techniques and methods. The hands-on

examples will help you become familiar with state-of-the-art machine learning tools and techniques and understand what algorithms are best suited for any problem. Practical Machine Learning with Python will empower you to start solving your own problems with machine learning today! What You'll Learn Execute end-to-end machine learning projects and systems Implement hands-on examples with industry standard, open source, robust machine learning tools and frameworks Review case studies depicting applications of machine learning and deep learning on diverse domains and industries Apply a wide range of machine learning models including regression, classification, and clustering. Understand and apply the latest models and methodologies from deep learning including CNNs, RNNs, LSTMs and transfer learning. Who This Book Is For IT professionals, analysts, developers, data scientists, engineers, graduate students

**Innovative Systems for Intelligent Health Informatics** - Faisal Saeed 2021-05-05

This book presents the papers included in the proceedings of the 5th International Conference of Reliable Information and Communication Technology 2020 (IRICT 2020) that was held virtually on December 21-22, 2020. The main theme of the book is "Innovative Systems for Intelligent Health Informatics". A total of 140 papers were submitted to the conference, but only 111 papers were published in this book. The book presents several hot research topics which include health informatics, bioinformatics, information retrieval, artificial intelligence, soft computing, data science, big data analytics, Internet of things (IoT), intelligent communication systems, information security, information systems, and software engineering.

*Hands-On Python Natural Language Processing* - Aman Kedia 2020-06-26

Get well-versed with traditional as well as modern natural language processing concepts and techniques Key Features Perform various NLP tasks to build linguistic applications using Python libraries Understand, analyze, and generate text to provide accurate results Interpret human language using various NLP concepts, methodologies, and tools Book Description Natural Language Processing (NLP) is the subfield in computational linguistics that enables computers to understand, process, and analyze text. This book caters to the unmet demand for hands-on training of NLP concepts and provides exposure to real-world applications along with a solid theoretical grounding. This book starts by introducing you to the field of NLP and its applications, along with the modern Python libraries that you'll use to build your NLP-powered apps. With the help of practical examples, you'll learn how to build reasonably sophisticated NLP applications, and cover various methodologies and challenges in deploying NLP applications in the real world. You'll cover key NLP tasks such as text classification, semantic embedding, sentiment analysis, machine translation, and developing a chatbot using machine learning and deep learning techniques. The book will also help you discover how machine learning techniques play a vital role in making your linguistic apps smart. Every chapter is accompanied by examples of real-world applications to help you build impressive NLP applications of your own. By the end of this NLP book, you'll be able to work with language data, use machine learning to identify patterns in text,

and get acquainted with the advancements in NLP. What you will learn Understand how NLP powers modern applications Explore key NLP techniques to build your natural language vocabulary Transform text data into mathematical data structures and learn how to improve text mining models Discover how various neural network architectures work with natural language data Get the hang of building sophisticated text processing models using machine learning and deep learning Check out state-of-the-art architectures that have revolutionized research in the NLP domain Who this book is for This NLP Python book is for anyone looking to learn NLP's theoretical and practical aspects alike. It starts with the basics and gradually covers advanced concepts to make it easy to follow for readers with varying levels of NLP proficiency. This comprehensive guide will help you develop a thorough understanding of the NLP methodologies for building linguistic applications; however, working knowledge of Python programming language and high school level mathematics is expected.

*Practical Machine Learning for Data Analysis Using Python* - Abdulhamit Subasi 2020-06-05

Practical Machine Learning for Data Analysis Using Python is a problem solver's guide for creating real-world intelligent systems. It provides a comprehensive approach with concepts, practices, hands-on examples, and sample code. The book teaches readers the vital skills required to understand and solve different problems with machine learning. It teaches machine learning techniques necessary to become a successful practitioner, through the presentation of real-world case studies in Python machine learning ecosystems. The book also focuses on building a foundation of machine learning knowledge to solve different real-world case studies across various fields, including biomedical signal analysis, healthcare, security, economics, and finance. Moreover, it covers a wide range of machine learning models, including regression, classification, and forecasting. The goal of the book is to help a broad range of readers, including IT professionals, analysts, developers, data scientists, engineers, and graduate students, to solve their own real-world problems. Offers a comprehensive overview of the application of machine learning tools in data analysis across a wide range of subject areas Teaches readers how to apply machine learning techniques to biomedical signals, financial data, and healthcare data Explores important classification and regression algorithms as well as other machine learning techniques Explains how to use Python to handle data extraction, manipulation, and exploration techniques, as well as how to visualize data spread across multiple dimensions and extract useful features

**Text Mining with R** - Julia Silge 2017-06-12

Chapter 7. Case Study : Comparing Twitter Archives; Getting the Data and Distribution of Tweets; Word Frequencies; Comparing Word Usage; Changes in Word Use; Favorites and Retweets; Summary; Chapter 8. Case Study : Mining NASA Metadata; How Data Is Organized at NASA; Wrangling and Tidying the Data; Some Initial Simple Exploration; Word Co-occurrences and Correlations; Networks of Description and Title Words; Networks of Keywords; Calculating tf-idf for the Description Fields; What Is tf-idf for the Description Field Words?; Connecting Description Fields to Keywords; Topic Modeling.