

Building Chatbots With Python Using Natural Langu

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Hands-On Natural Language Processing with Python Rajesh Arumugam 2018-07-18 Foster your NLP applications with the help of deep learning, NLTK, and TensorFlow Key Features Weave neural networks into linguistic applications across various platforms Perform NLP tasks and train its models using NLTK and TensorFlow Boost your NLP models with strong deep learning architectures such as CNNs and RNNs Book Description Natural language processing (NLP) has found its application in various domains, such as web search, advertisements, and customer services, and with the help of deep learning, we can enhance its performances in these areas. Hands-On Natural Language Processing with Python teaches you how to leverage deep learning models for performing various NLP tasks, along with best practices in dealing with today's NLP challenges. To begin with, you will understand the core concepts of NLP and deep learning, such as Convolutional Neural Networks (CNNs), recurrent neural networks (RNNs), semantic embedding, Word2vec, and more. You will learn how to perform each and every task of NLP using neural networks, in which you will train and deploy neural networks in your NLP applications. You will get accustomed to using RNNs and CNNs in various application areas, such as text classification and sequence labeling, which are essential in the application of sentiment analysis, customer service chatbots, and anomaly detection. You will be equipped with practical knowledge in order to implement deep learning in your linguistic applications using Python's popular deep learning library, TensorFlow. By the end of this book, you will be well versed in building deep learning-backed NLP applications, along with overcoming NLP challenges with best practices developed by domain experts. What you will learn Implement semantic embedding of words to classify and find entities Convert words to vectors by training in order to perform arithmetic operations Train a deep learning model to detect classification of tweets and news Implement a question-answer model with search and RNN models Train models for various text classification datasets using CNN Implement WaveNet a deep generative model for producing a natural-sounding voice Convert voice-to-text and text-to-voice Train a model to convert speech-to-text using DeepSpeech Who this book is for Hands-on Natural Language Processing with Python is for you if you are a developer, machine learning or an NLP engineer who wants to build a deep learning application that leverages NLP techniques. This comprehensive guide is also useful for deep learning users who want to extend their deep learning skills in building NLP applications. All you need is the basics of machine learning and Python to enjoy the book.

Natural Language Processing Projects Akshay Kulkarni 2021-12-04 Leverage

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machine learning and deep learning techniques to build fully-fledged natural language processing (NLP) projects. Projects throughout this book grow in complexity and showcase methodologies, optimizing tips, and tricks to solve various business problems. You will use modern Python libraries and algorithms to build end-to-end NLP projects. The book starts with an overview of natural language processing (NLP) and artificial intelligence to provide a quick refresher on algorithms. Next, it covers end-to-end NLP projects beginning with traditional algorithms and projects such as customer review sentiment and emotion detection, topic modeling, and document clustering. From there, it delves into e-commerce related projects such as product categorization using the description of the product, a search engine to retrieve the relevant content, and a content-based recommendation system to enhance user experience. Moving forward, it explains how to build systems to find similar sentences using contextual embedding, summarizing huge documents using recurrent neural networks (RNN), automatic word suggestion using long short-term memory networks (LSTM), and how to build a chatbot using transfer learning. It concludes with an exploration of next-generation AI and algorithms in the research space. By the end of this book, you will have the knowledge needed to solve various business problems using NLP techniques. What You Will Learn Implement full-fledged intelligent NLP applications with Python Translate real-world business problem on text data with NLP techniques Leverage machine learning and deep learning techniques to perform smart language processing Gain hands-on experience implementing end-to-end search engine information retrieval, text summarization, chatbots, text generation, document clustering and product classification, and more Who This Book Is For Data scientists, machine learning engineers, and deep learning professionals looking to build natural language applications using Python

Real-World Natural Language Processing Masato Hagiwara 2021-12-21 Real-world Natural Language Processing shows you how to build the practical NLP applications that are transforming the way humans and computers work together. In Real-world Natural Language Processing you will learn how to: Design, develop, and deploy useful NLP applications Create named entity taggers Build machine translation systems Construct language generation systems and chatbots Use advanced NLP concepts such as attention and transfer learning Real-world Natural Language Processing teaches you how to create practical NLP applications without getting bogged down in complex language theory and the mathematics of deep learning. In this engaging book, you'll explore the core tools and techniques required to build a huge range of powerful NLP apps, including chatbots, language detectors, and text classifiers. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Training computers to interpret and generate speech and text is a monumental challenge, and the payoff for reducing labor and improving human/computer interaction is huge! The field of Natural Language Processing (NLP) is advancing rapidly, with countless new tools and practices. This unique book offers an innovative collection of NLP techniques with applications in machine translation, voice assistants, text generation, and more. About the book Real-world Natural Language Processing shows you how to build the practical NLP applications that are transforming the way humans and computers work together. Guided by clear explanations of each core NLP topic, you'll create many interesting applications including a sentiment analyzer and a chatbot. Along the way, you'll use Python and open source libraries like AllenNLP and HuggingFace Transformers to speed up your development process. What's inside Design, develop, and deploy useful NLP applications Create named entity taggers Build machine translation systems

Construct language generation systems and chatbots About the reader For Python programmers. No prior machine learning knowledge assumed. About the author Masato Hagiwara received his computer science PhD from Nagoya University in 2009. He has interned at Google and Microsoft Research, and worked at Duolingo as a Senior Machine Learning Engineer. He now runs his own research and consulting company. Table of Contents PART 1 BASICS 1 Introduction to natural language processing 2 Your first NLP application 3 Word and document embeddings 4 Sentence classification 5 Sequential labeling and language modeling PART 2 ADVANCED MODELS 6 Sequence-to-sequence models 7 Convolutional neural networks 8 Attention and Transformer 9 Transfer learning with pretrained language models PART 3 PUTTING INTO PRODUCTION 10 Best practices in developing NLP applications 11 Deploying and serving NLP applications

Hands-On Chatbots and Conversational UI Development Srini Janarthanam 2017-12-29 Conversation as an interface is the best way for machines to interact with us using the universally accepted human tool that is language. Chatbots and voice user interfaces are two flavors of conversational UIs. Chatbots are real-time, data-driven answer engines that talk in natural language and are context-aware. Voice user interfaces are ...

Natural Language Processing with Transformers Lewis Tunstall 2022-01-26 Since their introduction in 2017, transformers have quickly become the dominant architecture for achieving state-of-the-art results on a variety of natural language processing tasks. If you're a data scientist or coder, this practical book shows you how to train and scale these large models using Hugging Face Transformers, a Python-based deep learning library. Transformers have been used to write realistic news stories, improve Google Search queries, and even create chatbots that tell corny jokes. In this guide, authors Lewis Tunstall, Leandro von Werra, and Thomas Wolf, among the creators of Hugging Face Transformers, use a hands-on approach to teach you how transformers work and how to integrate them in your applications. You'll quickly learn a variety of tasks they can help you solve. Build, debug, and optimize transformer models for core NLP tasks, such as text classification, named entity recognition, and question answering Learn how transformers can be used for cross-lingual transfer learning Apply transformers in real-world scenarios where labeled data is scarce Make transformer models efficient for deployment using techniques such as distillation, pruning, and quantization Train transformers from scratch and learn how to scale to multiple GPUs and distributed environments

Natural Language Processing with Python and spaCy Yuli Vasiliev 2020-05-12 An introduction to natural language processing with Python using spaCy, a leading Python natural language processing library. Natural Language Processing with Python and spaCy will show you how to create NLP applications like chatbots, text-condensing scripts, and order-processing tools quickly and easily. You'll learn how to leverage the spaCy library to extract meaning from text intelligently; how to determine the relationships between words in a sentence (syntactic dependency parsing); identify nouns, verbs, and other parts of speech (part-of-speech tagging); and sort proper nouns into categories like people, organizations, and locations (named entity recognizing). You'll even learn how to transform statements into questions to keep a conversation going. You'll also learn how to: Work with word vectors to mathematically find words with similar meanings (Chapter 5) Identify patterns within data using spaCy's built-in displaCy visualizer (Chapter 7) Automatically extract keywords from user input and store them in a relational database (Chapter 9) Deploy a chatbot app to interact with users over the internet (Chapter 11) "Try This" sections

in each chapter encourage you to practice what you've learned by expanding the book's example scripts to handle a wider range of inputs, add error handling, and build professional-quality applications. By the end of the book, you'll be creating your own NLP applications with Python and spaCy.

Deep Learning with Applications Using Python Navin Kumar Manaswi 2018-04-04 Explore deep learning applications, such as computer vision, speech recognition, and chatbots, using frameworks such as TensorFlow and Keras. This book helps you to ramp up your practical know-how in a short period of time and focuses you on the domain, models, and algorithms required for deep learning applications. *Deep Learning with Applications Using Python* covers topics such as chatbots, natural language processing, and face and object recognition. The goal is to equip you with the concepts, techniques, and algorithm implementations needed to create programs capable of performing deep learning. This book covers convolutional neural networks, recurrent neural networks, and multilayer perceptrons. It also discusses popular APIs such as IBM Watson, Microsoft Azure, and scikit-learn. What You Will Learn Work with various deep learning frameworks such as TensorFlow, Keras, and scikit-learn. Use face recognition and face detection capabilities Create speech-to-text and text-to-speech functionality Engage with chatbots using deep learning Who This Book Is For Data scientists and developers who want to adapt and build deep learning applications.

Programming the Microsoft Bot Framework Joe Mayo 2017-11-21 This is the only comprehensive, authoritative guide to building Conversational User Interfaces (CUI, a.k.a. bots, chatbots, or chatterbots) with the Microsoft Bot Framework. Reflecting the next radical revolution in human-computer interaction, it will help you leverage advanced artificial intelligence (AI) and natural language processing to empower new and existing applications with stunningly intuitive conversational interfaces. Long-time Microsoft MVP Joe Mayo begins with high-level explanations of what Microsoft Bot Framework is, what you can do with it, and why it matters so much. Next, he presents the foundational knowledge you need to start creating real bots and CUIs. Step by step, you'll learn how to build message dialogs, manage conversations, interact with framework APIs, and incorporate powerful natural language processing with Microsoft's advanced Language Understanding Intelligent Service (LUIS). Mayo also offers detailed guidance on deploying your customized bots to key platforms such as Slack, Skype, and Facebook Messenger. Throughout, Mayo's practical examples combine code with clear explanations of when and why you would perform each task. From start to finish, *Programming the Microsoft Bot Framework* is relentlessly practical, helping you translate the advanced "magic" of intelligent bots into real solutions right now.

Exploring the Convergence of Computer and Medical Science Through Cloud Healthcare Queirós, Ricardo 2022-09-09 Digital technologies are currently dramatically changing healthcare. Cloud healthcare is an increasingly trending topic in the field, converging skills from computer and health science. This new strategy fosters the management of health data at a large scale and makes it easier for healthcare organizations to improve patient experience and health team productivity while helping the support, security, compliance, and interoperability of health data. *Exploring the Convergence of Computer and Medical Science Through Cloud Healthcare* is a reference in the ongoing digital transformation of the healthcare sector. It presents a comprehensive state-of-the-art approach to cloud internet of things health technologies and practices. It provides insights over strategies, methodologies, techniques, tools, and

services based on emerging cloud digital health solutions to overcome digital health challenges. Covering topics such as auxiliary systems, the internet of medical things, and natural language processing, this premier reference source is an essential resource for medical professionals, hospital administrators, medical students, medical professors, libraries, researchers, and academicians.

Applied Natural Language Processing with Python Taweh Beysolow II 2018-09-11 Learn to harness the power of AI for natural language processing, performing tasks such as spell check, text summarization, document classification, and natural language generation. Along the way, you will learn the skills to implement these methods in larger infrastructures to replace existing code or create new algorithms. Applied Natural Language Processing with Python starts with reviewing the necessary machine learning concepts before moving onto discussing various NLP problems. After reading this book, you will have the skills to apply these concepts in your own professional environment. What You Will Learn Utilize various machine learning and natural language processing libraries such as TensorFlow, Keras, NLTK, and Gensim Manipulate and preprocess raw text data in formats such as .txt and .pdf Strengthen your skills in data science by learning both the theory and the application of various algorithms Who This Book Is For You should be at least a beginner in ML to get the most out of this text, but you needn't feel that you need be an expert to understand the content.

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

Natural Language Processing with Python and spaCy Yuli Vasiliev 2020-04-28 An introduction to natural language processing with Python using spaCy, a leading Python natural language processing library. Natural Language Processing with Python and spaCy will show you how to create NLP applications like chatbots, text-condensing scripts, and order-processing tools quickly and easily. You'll learn how to leverage the spaCy library to extract meaning from text intelligently; how to determine the relationships between words in a sentence (syntactic dependency parsing); identify nouns, verbs, and other parts of speech (part-of-speech tagging); and sort proper nouns into categories like people, organizations, and locations (named entity recognizing). You'll even learn how to transform statements into questions to keep a conversation going. You'll also learn how to:

- Work with word vectors to mathematically find words

with similar meanings (Chapter 5) • Identify patterns within data using spaCy's built-in displaCy visualizer (Chapter 7) • Automatically extract keywords from user input and store them in a relational database (Chapter 9) • Deploy a chatbot app to interact with users over the internet (Chapter 11) "Try This" sections in each chapter encourage you to practice what you've learned by expanding the book's example scripts to handle a wider range of inputs, add error handling, and build professional-quality applications. By the end of the book, you'll be creating your own NLP applications with Python and spaCy.

Conversational AI with Rasa Xiaoquan Kong 2021-10-08 Create next-level AI assistants and transform how customers communicate with businesses with the power of natural language understanding and dialogue management using Rasa Key Features Understand the architecture and put the underlying principles of the Rasa framework to practice Learn how to quickly build different types of chatbots such as task-oriented, FAQ-like, and knowledge graph-based chatbots Explore best practices for working with Rasa and its debugging and optimizing aspects Book Description The Rasa framework enables developers to create industrial-strength chatbots using state-of-the-art natural language processing (NLP) and machine learning technologies quickly, all in open source. Conversational AI with Rasa starts by showing you how the two main components at the heart of Rasa work - Rasa NLU (natural language understanding) and Rasa Core. You'll then learn how to build, configure, train, and serve different types of chatbots from scratch by using the Rasa ecosystem. As you advance, you'll use form-based dialogue management, work with the response selector for chitchat and FAQ-like dialogs, make use of knowledge base actions to answer questions for dynamic queries, and much more. Furthermore, you'll understand how to customize the Rasa framework, use conversation-driven development patterns and tools to develop chatbots, explore what your bot can do, and easily fix any mistakes it makes by using interactive learning. Finally, you'll get to grips with deploying the Rasa system to a production environment with high performance and high scalability and cover best practices for building an efficient and robust chat system. By the end of this book, you'll be able to build and deploy your own chatbots using Rasa, addressing the common pain points encountered in the chatbot life cycle. What you will learn Use the response selector to handle chitchat and FAQs Create custom actions using the Rasa SDK Train Rasa to handle complex named entity recognition Become skilled at building custom components in the Rasa framework Validate and test dialogs end to end in Rasa Develop and refine a chatbot system by using conversation-driven deployment processing Use TensorBoard for tuning to find the best configuration options Debug and optimize dialogue systems based on Rasa Who this book is for This book is for NLP professionals as well as machine learning and deep learning practitioners who have knowledge of natural language processing and want to build chatbots with Rasa. Anyone with beginner-level knowledge of NLP and deep learning will be able to get the most out of the book.

Python Natural Language Processing Cookbook Zhenya Antić 2021-03-19 Get to grips with solving real-world NLP problems, such as dependency parsing, information extraction, topic modeling, and text data visualization Key Features Analyze varying complexities of text using popular Python packages such as NLTK, spaCy, sklearn, and gensim Implement common and not-so-common linguistic processing tasks using Python libraries Overcome the common challenges faced while implementing NLP pipelines Book Description Python is the most widely used language for natural language processing (NLP) thanks to its extensive tools and libraries for analyzing text and extracting computer-usable data. This book will take you through a range of techniques for text

processing, from basics such as parsing the parts of speech to complex topics such as topic modeling, text classification, and visualization. Starting with an overview of NLP, the book presents recipes for dividing text into sentences, stemming and lemmatization, removing stopwords, and parts of speech tagging to help you to prepare your data. You'll then learn ways of extracting and representing grammatical information, such as dependency parsing and anaphora resolution, discover different ways of representing the semantics using bag-of-words, TF-IDF, word embeddings, and BERT, and develop skills for text classification using keywords, SVMs, LSTMs, and other techniques. As you advance, you'll also see how to extract information from text, implement unsupervised and supervised techniques for topic modeling, and perform topic modeling of short texts, such as tweets. Additionally, the book shows you how to develop chatbots using NLTK and Rasa and visualize text data. By the end of this NLP book, you'll have developed the skills to use a powerful set of tools for text processing. What you will learn

Become well-versed with basic and advanced NLP techniques in Python

Represent grammatical information in text using spaCy, and semantic information using bag-of-words, TF-IDF, and word embeddings

Perform text classification using different methods, including SVMs and LSTMs

Explore different techniques for topic modeling such as K-means, LDA, NMF, and BERT

Work with visualization techniques such as NER and word clouds for different NLP tools

Build a basic chatbot using NLTK and Rasa

Extract information from text using regular expression techniques and statistical and deep learning tools

Who this book is for This book is for data scientists and professionals who want to learn how to work with text. Intermediate knowledge of Python will help you to make the most out of this book. If you are an NLP practitioner, this book will serve as a code reference when working on your projects.

Python Natural Language Processing Jalaj Thanaki 2017-07-31 Leverage the power of machine learning and deep learning to extract information from text data

About This Book Implement Machine Learning and Deep Learning techniques for efficient natural language processing Get started with NLTK and implement NLP in your applications with ease Understand and interpret human languages with the power of text analysis via Python Who This Book Is For This book is intended for Python developers who wish to start with natural language processing and want to make their applications smarter by implementing NLP in them. What You Will Learn Focus on Python programming paradigms, which are used to develop NLP applications Understand corpus analysis and different types of data attribute. Learn NLP using Python libraries such as NLTK, Polyglot, SpaCy, Stanford CoreNLP and so on Learn about Features Extraction and Feature selection as part of Features Engineering. Explore the advantages of vectorization in Deep Learning. Get a better understanding of the architecture of a rule-based system. Optimize and fine-tune Supervised and Unsupervised Machine Learning algorithms for NLP problems. Identify Deep Learning techniques for Natural Language Processing and Natural Language Generation problems. In Detail This book starts off by laying the foundation for Natural Language Processing and why Python is one of the best options to build an NLP-based expert system with advantages such as Community support, availability of frameworks and so on. Later it gives you a better understanding of available free forms of corpus and different types of dataset. After this, you will know how to choose a dataset for natural language processing applications and find the right NLP techniques to process sentences in datasets and understand their structure. You will also learn how to tokenize different parts of sentences and ways to analyze them. During the course of the book, you will explore the semantic as well as syntactic analysis of text. You will understand how to solve various ambiguities in processing human language and will come across

various scenarios while performing text analysis. You will learn the very basics of getting the environment ready for natural language processing, move on to the initial setup, and then quickly understand sentences and language parts. You will learn the power of Machine Learning and Deep Learning to extract information from text data. By the end of the book, you will have a clear understanding of natural language processing and will have worked on multiple examples that implement NLP in the real world. Style and approach This book teaches the readers various aspects of natural language Processing using NLTK. It takes the reader from the basic to advance level in a smooth way.

Natural Language Processing with Python Quick Start Guide Nirant Kasliwal 2018-11-30 Build and deploy intelligent applications for natural language processing with Python by using industry standard tools and recently popular methods in deep learning Key FeaturesA no-math, code-driven programmer's guide to text processing and NLPGet state of the art results with modern tooling across linguistics, text vectors and machine learningFundamentals of NLP methods from spaCy, gensim, scikit-learn and PyTorchBook Description NLP in Python is among the most sought after skills among data scientists. With code and relevant case studies, this book will show how you can use industry-grade tools to implement NLP programs capable of learning from relevant data. We will explore many modern methods ranging from spaCy to word vectors that have reinvented NLP. The book takes you from the basics of NLP to building text processing applications. We start with an introduction to the basic vocabulary along with a workflow for building NLP applications. We use industry-grade NLP tools for cleaning and pre-processing text, automatic question and answer generation using linguistics, text embedding, text classifier, and building a chatbot. With each project, you will learn a new concept of NLP. You will learn about entity recognition, part of speech tagging and dependency parsing for Q and A. We use text embedding for both clustering documents and making chatbots, and then build classifiers using scikit-learn. We conclude by deploying these models as REST APIs with Flask. By the end, you will be confident building NLP applications, and know exactly what to look for when approaching new challenges. What you will learnUnderstand classical linguistics in using English grammar for automatically generating questions and answers from a free text corpusWork with text embedding models for dense number representations of words, subwords and characters in the English language for exploring document clusteringDeep Learning in NLP using PyTorch with a code-driven introduction to PyTorchUsing an NLP project management Framework for estimating timelines and organizing your project into stagesHack and build a simple chatbot application in 30 minutesDeploy an NLP or machine learning application using Flask as RESTFUL APIsWho this book is for Programmers who wish to build systems that can interpret language. Exposure to Python programming is required. Familiarity with NLP or machine learning vocabulary will be helpful, but not mandatory.

Building Chatbots with Python Sumit Raj 2018-12-12 Build your own chatbot using Python and open source tools. This book begins with an introduction to chatbots where you will gain vital information on their architecture. You will then dive straight into natural language processing with the natural language toolkit (NLTK) for building a custom language processing platform for your chatbot. With this foundation, you will take a look at different natural language processing techniques so that you can choose the right one for you. The next stage is to learn to build a chatbot using the API.ai platform and define its intents and entities. During this example, you will learn to enable communication with your bot and also take a look at key points of its integration and deployment. The final chapter of Building Chatbots with Python

teaches you how to build, train, and deploy your very own chatbot. Using open source libraries and machine learning techniques you will learn to predict conditions for your bot and develop a conversational agent as a web application. Finally you will deploy your chatbot on your own server with AWS. What You Will Learn Gain the basics of natural language processing using Python Collect data and train your data for the chatbot Build your chatbot from scratch as a web app Integrate your chatbots with Facebook, Slack, and Telegram Deploy chatbots on your own server Who This Book Is For Intermediate Python developers who have no idea about chatbots. Developers with basic Python programming knowledge can also take advantage of the book.

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.

Deep Learning for Natural Language Processing Jason Brownlee 2017-11-21 Deep learning methods are achieving state-of-the-art results on challenging machine learning problems such as describing photos and translating text from one language to another. In this new laser-focused Ebook, finally cut through the math, research papers and patchwork descriptions about natural language processing. Using clear explanations, standard Python libraries and step-by-step tutorial lessons you will discover what natural language processing is, the promise of deep learning in the field, how to clean and prepare text data for modeling, and how to develop deep learning models for your own natural language processing projects.

Deep Learning for Natural Language Processing Palash Goyal 2018-06-26 Discover the concepts of deep learning used for natural language processing (NLP), with full-fledged examples of neural network models such as recurrent neural networks, long short-term memory networks, and sequence-to-sequence models. You'll start by covering the mathematical prerequisites and the fundamentals of deep learning and NLP with practical examples. The first three chapters of the book cover the basics of NLP, starting with word-vector representation before moving onto advanced algorithms. The final chapters focus entirely on implementation, and deal with sophisticated architectures such as RNN, LSTM, and Seq2seq, using Python tools: TensorFlow, and Keras. Deep Learning for

Natural Language Processing follows a progressive approach and combines all the knowledge you have gained to build a question-answer chatbot system. This book is a good starting point for people who want to get started in deep learning for NLP. All the code presented in the book will be available in the form of IPython notebooks and scripts, which allow you to try out the examples and extend them in interesting ways. What You Will Learn Gain the fundamentals of deep learning and its mathematical prerequisites Discover deep learning frameworks in Python Develop a chatbot Implement a research paper on sentiment classification Who This Book Is For Software developers who are curious to try out deep learning with NLP.

Natural Language Processing with Python Steven Bird 2016-03-25 This practical book provides 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, this second edition includes code updated for Python 3, shows you how to scale up for larger data sets, and covers the semantic web. 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

Cognitive Virtual Assistants Using Google Dialogflow Navin Sabharwal 2020-03-16 Follow a step-by-step, hands-on approach to building production-ready enterprise cognitive virtual assistants using Google Dialogflow. This book provides an overview of the various cognitive technology choices available and takes a deep dive into cognitive virtual agents for handling complex real-life use cases in various industries such as travel and weather. You'll delve deeper into the advanced features of cognitive virtual assistants implementing features such as input/output context, follow-up intents, actions and parameters, and handling complex multiple intents. You'll learn how to integrate with third-party messaging platforms by integrating your cognitive bot with Facebook messenger. You'll also integrate with third-party APIs to enrich your cognitive bots using webhooks. Cognitive Virtual Assistants Using Google Dialogflow takes the complexity out of the cognitive platform and provides rich guidance which you can use when developing your own cognitive bots. The book covers Google Dialogflow in-depth and starts with the basics, serving as a hands-on guide for developers who are starting out on their journey with Google Dialogflow. All the code presented in the book will be available in the form of scripts and configuration files, which allows you to try out the examples and extend them in interesting ways. What You Will Learn Develop cognitive bots with Google Dialogflow technology Use advanced features to handle complex conversation scenarios Enrich the bot's conversations by understanding the sentiment of the user See best practices for developing cognitive bots Enhance a cognitive bot by integrating with third-party services Who This Book Is For AI and ML developers.

Hands-On Natural Language Processing with PyTorch 1.x Thomas Dop 2020-07-09 Become a proficient NLP data scientist by developing deep learning models for NLP and extract valuable insights from structured and unstructured data Key

FeaturesGet to grips with word embeddings, semantics, labeling, and high-level word representations using practical examplesLearn modern approaches to NLP and explore state-of-the-art NLP models using PyTorchImprove your NLP applications with innovative neural networks such as RNNs, LSTMs, and CNNsBook Description In the internet age, where an increasing volume of text data is generated daily from social media and other platforms, being able to make sense of that data is a crucial skill. With this book, you'll learn how to extract valuable insights from text by building deep learning models for natural language processing (NLP) tasks. Starting by understanding how to install PyTorch and using CUDA to accelerate the processing speed, you'll explore how the NLP architecture works with the help of practical examples. This PyTorch NLP book will guide you through core concepts such as word embeddings, CBOW, and tokenization in PyTorch. You'll then learn techniques for processing textual data and see how deep learning can be used for NLP tasks. The book demonstrates how to implement deep learning and neural network architectures to build models that will allow you to classify and translate text and perform sentiment analysis. Finally, you'll learn how to build advanced NLP models, such as conversational chatbots. By the end of this book, you'll not only have understood the different NLP problems that can be solved using deep learning with PyTorch, but also be able to build models to solve them. What you will learnUse NLP techniques for understanding, processing, and generating textUnderstand PyTorch, its applications and how it can be used to build deep linguistic modelsExplore the wide variety of deep learning architectures for NLPDevelop the skills you need to process and represent both structured and unstructured NLP dataBecome well-versed with state-of-the-art technologies and exciting new developments in the NLP domainCreate chatbots using attention-based neural networksWho this book is for This PyTorch book is for NLP developers, machine learning and deep learning developers, and anyone interested in building intelligent language applications using both traditional NLP approaches and deep learning architectures. If you're looking to adopt modern NLP techniques and models for your development projects, this book is for you. Working knowledge of Python programming, along with basic working knowledge of NLP tasks, is required.

The Natural Language Processing Workshop Rohan Chopra 2020-08-17 Make NLP easy by building chatbots and models, and executing various NLP tasks to gain data-driven insights from raw text data Key FeaturesGet familiar with key natural language processing (NLP) concepts and terminologyExplore the functionalities and features of popular NLP toolsLearn how to use Python programming and third-party libraries to perform NLP tasksBook Description Do you want to learn how to communicate with computer systems using Natural Language Processing (NLP) techniques, or make a machine understand human sentiments? Do you want to build applications like Siri, Alexa, or chatbots, even if you've never done it before? With *The Natural Language Processing Workshop*, you can expect to make consistent progress as a beginner, and get up to speed in an interactive way, with the help of hands-on activities and fun exercises. The book starts with an introduction to NLP. You'll study different approaches to NLP tasks, and perform exercises in Python to understand the process of preparing datasets for NLP models. Next, you'll use advanced NLP algorithms and visualization techniques to collect datasets from open websites, and to summarize and generate random text from a document. In the final chapters, you'll use NLP to create a chatbot that detects positive or negative sentiment in text documents such as movie reviews. By the end of this book, you'll be equipped with the essential NLP tools and techniques you need to solve common business problems that involve processing text. What you will learnObtain, verify, clean and transform text data into a correct format for useUse methods such as

tokenization and stemming for text extraction
Develop a classifier to classify comments in Wikipedia articles
Collect data from open websites with the help of web scraping
Train a model to detect topics in a set of documents using topic modeling
Discover techniques to represent text as word and document vectors
Who this book is for
This book is for beginner to mid-level data scientists, machine learning developers, and NLP enthusiasts. A basic understanding of machine learning and NLP is required to help you grasp the topics in this workshop more quickly.

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.

Building Chatbots with Microsoft Bot Framework and Node.js G. Akshay Kulkarni 2018-11-30
With so many flesh-and-blood humans needing support, digital assistants can offer a valuable service finding out what users need and improving the basic process of online data gathering. *Building Chatbots with Microsoft Bot Framework and Node.js* walks readers concept-by-concept through the process of building their own capable chatbot. With this in-depth, practical book readers learn the basics of chatbot design, development, and deployment by building a virtual health assistant. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

Natural Language Processing Fundamentals Sohom Ghosh 2019-03-30
Use Python and NLTK (Natural Language Toolkit) to build out your own text classifiers and solve common NLP problems. Key Features
Assimilate key NLP concepts and terminologies
Explore popular NLP tools and techniques
Gain practical experience using NLP in application code
Book Description
If NLP hasn't been your forte, *Natural Language Processing Fundamentals* will make sure you set off to a steady start. This comprehensive guide will show you how to effectively use Python libraries and NLP concepts to solve various problems. You'll be introduced to natural language processing and its applications through examples and exercises. This will be followed by an introduction to the initial stages of solving a problem, which includes problem definition, getting text data, and preparing it for modeling. With exposure to concepts like advanced natural language processing algorithms and visualization techniques, you'll learn how to create applications that can extract information from unstructured data and

present it as impactful visuals. Although you will continue to learn NLP-based techniques, the focus will gradually shift to developing useful applications. In these sections, you'll understand how to apply NLP techniques to answer questions as can be used in chatbots. By the end of this book, you'll be able to accomplish a varied range of assignments ranging from identifying the most suitable type of NLP task for solving a problem to using a tool like spacy or gensim for performing sentiment analysis. The book will easily equip you with the knowledge you need to build applications that interpret human language. What you will learn Obtain, verify, and clean data before transforming it into a correct format for use Perform data analysis and machine learning tasks using Python Understand the basics of computational linguistics Build models for general natural language processing tasks Evaluate the performance of a model with the right metrics Visualize, quantify, and perform exploratory analysis from any text data Who this book is for Natural Language Processing Fundamentals is designed for novice and mid-level data scientists and machine learning developers who want to gather and analyze text data to build an NLP-powered product. It'll help you to have prior experience of coding in Python using data types, writing functions, and importing libraries. Some experience with linguistics and probability is useful but not necessary.

Getting Started with Chatbots Akhil Mittal 2019-09-20 A complete guide to build a better Chatbots DESCRIPTION This book makes you familiar with the concept of the chatbot. It explains what chatbot is, how does a chatbot work, and what exactly is the need for a chatbot in today's era? It focuses on creating a bot using Amazon's Lex service and getting the bot deployed on Facebook messenger for live chatting. This book will train you on how to create a chatbot using Google's Dialogflow and test the bot in Dialogflow console. It also demonstrates how to create a custom chatbot using Microsoft's bot framework and enable the webhooks in Dialogflow and return the response from the custom bot to Dialogflow intents as a fulfilment response. KEY FEATURES Concept of artificial intelligence (AI) and machine learning How AI is involved in creating chatbots What are chatbots Chatbot development Live chatting Create chatbot with technologies such as Amazon Lex, Google Dialogflow, AWS Lambda, Microsoft Bot Framework, and Azure Deploy and talk to your bot WHAT WILL YOU LEARN Learn the concept of chatbot Learn how chatbots and AI work hand in hand Learn the concept of machine learning in chatbots Get familiar with chatbot services such as Amazon's Lex and Google's Dialogflow Learn how to write an AWS Lambda function Learn what webhooks are Learn about Microsoft's Bot Framework Write your own custom chatbot Deploy the chatbot on Facebook Messenger, Google Assistant, and Slack Live chatting with your own chatbot WHO THIS BOOK IS FOR The developers, architects, and software/technology enthusiasts who are keen to learn the cutting-edge technologies and want to get a hands-on experience on AI by creating their own custom chatbots. Organizations, small companies, service-based/product-based setups which want to learn how to create a basic chatbot on their website and on social media to get more leads and reach to the end user for their business. Students, if they are seeking something where they can create and integrate the real-time chatbots in their projects. Table of Contents Section 1: The Concept 1. What are Chatbots? 2. How Chatbot Works 3. What is the Need for a Chatbot? 4. Conversational Flow? Section 2: Creating a Chatbot Using Amazon Lex 1. Amazon Lex and AWS Account 2. Create Bot Using Amazon Lex 3. AWS Lambda Function 4. Slots 5. Error Handling 6. Deploy the Bot on Facebook Messenger 7. Live Chatbot on Facebook Section 3: Creating a Chatbot Using Dialogflow API and Microsoft's Bot Framework Technical Requirements 1. Dialogflow Account 2. Creating a Bot in Dialogflow 3. Dialogflow Console 4. Integrating the Bot with Slack 5. Chatbot Using Microsoft Bot Framework 6.

Publishing the Bot from Visual Studio to Azure 7. Register the Bot 8. Dialogflow.v2 SDK 9. Webhooks in Dialogflow 10. Testing the Bot 11. Deploy the Chatbot in Facebook Messenger 12. Live Chatbot on Facebook 13. Deploy the Chatbot in Slack

Advances in Computing and Data Sciences Mayank Singh 2022-08-27 The two-volume proceedings CCIS 1613 + 1614 constitute revised selected papers from the 6th International Conference on Advances in Computing and Data Sciences, ICACDS 2022, which was held in Kurnool, India in April 2022. The total of 69 full papers presented in the proceedings was carefully reviewed and selected from 411 submissions. The papers focus on advances of next generation computing technologies in the areas of advanced computing and data sciences.

Conversational AI Andrew Freed 2021-10-12 Design, develop, and deploy human-like AI solutions that chat with your customers, solve their problems, and streamline your support services. In *Conversational AI*, you will learn how to: Pick the right AI assistant type and channel for your needs Write dialog with intentional tone and specificity Train your AI's classifier from the ground up Create question-and-direct-response AI assistants Design and optimize a process flow for web and voice Test your assistant's accuracy and plan out improvements *Conversational AI: Chatbots that work* teaches you to create the kind of AI-enabled assistants that are revolutionizing the customer service industry. You'll learn to build effective conversational AI that can automate common inquiries and easily address your customers' most common problems. This engaging and entertaining book delivers the essential technical and creative skills for designing successful AI solutions, from coding process flows and training machine learning, to improving your written dialog. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Create AI-driven chatbots and other intelligent agents that humans actually enjoy talking to! Adding intelligence to automated response systems saves time and money for you and your customers. Conversational AI systems excel at routine tasks such as answering common questions, classifying issues, and routing customers to the appropriate human staff. This book will show you how to build effective, production-ready AI assistants. About the book *Conversational AI* is a guide to creating AI-driven voice and text agents for customer support and other conversational tasks. This practical and entertaining book combines design theory with techniques for building and training AI systems. In it, you'll learn how to find training data, assess performance, and write dialog that sounds human. You'll go from building simple chatbots to designing the voice assistant for a complete call center. What's inside Pick the right AI for your needs Train your AI classifier Create question-and-direct-response assistants Design and optimize a process flow About the reader For software developers. Examples use Watson Assistant and Python. About the author Andrew R. Freed is a Master Inventor and Senior Technical Staff Member at IBM. He has worked in AI solutions since 2012. Table of Contents PART 1 FOUNDATIONS 1 Introduction to conversational AI 2 Building your first conversational AI PART 2 DESIGNING FOR SUCCESS 3 Designing effective processes 4 Designing effective dialogue 5 Building a successful AI assistant PART 3 TRAINING AND TESTING 6 Training your assistant 7 How accurate is your assistant? 8 Testing your dialogue flows PART 4 MAINTENANCE 9 Deployment and management 10 Improving your assistant PART 5 ADVANCED/OPTIONAL TOPICS 11 Building your own classifier 12 Additional training for voice assistants

Natural Language Processing in Action Hannes Hapke 2019-03-16 Summary *Natural Language Processing in Action* is your guide to creating machines that

understand human language using the power of Python with its ecosystem of packages dedicated to NLP and AI. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Recent advances in deep learning empower applications to understand text and speech with extreme accuracy. The result? Chatbots that can imitate real people, meaningful resume-to-job matches, superb predictive search, and automatically generated document summaries—all at a low cost. New techniques, along with accessible tools like Keras and TensorFlow, make professional-quality NLP easier than ever before. About the Book Natural Language Processing in Action is your guide to building machines that can read and interpret human language. In it, you'll use readily available Python packages to capture the meaning in text and react accordingly. The book expands traditional NLP approaches to include neural networks, modern deep learning algorithms, and generative techniques as you tackle real-world problems like extracting dates and names, composing text, and answering free-form questions. What's inside Some sentences in this book were written by NLP! Can you guess which ones? Working with Keras, TensorFlow, gensim, and scikit-learn Rule-based and data-based NLP Scalable pipelines About the Reader This book requires a basic understanding of deep learning and intermediate Python skills. About the Author Hobson Lane, Cole Howard, and Hannes Max Hapke are experienced NLP engineers who use these techniques in production. Table of Contents PART 1 - WORDY MACHINES Packets of thought (NLP overview) Build your vocabulary (word tokenization) Math with words (TF-IDF vectors) Finding meaning in word counts (semantic analysis) PART 2 - DEEPER LEARNING (NEURAL NETWORKS) Baby steps with neural networks (perceptrons and backpropagation) Reasoning with word vectors (Word2vec) Getting words in order with convolutional neural networks (CNNs) Loopy (recurrent) neural networks (RNNs) Improving retention with long short-term memory networks Sequence-to-sequence models and attention PART 3 - GETTING REAL (REAL-WORLD NLP CHALLENGES) Information extraction (named entity extraction and question answering) Getting chatty (dialog engines) Scaling up (optimization, parallelization, and batch processing)

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.

Natural Language Processing with Python Quick Start Guide Nirant Kasliwal 2018-11-30 Build and deploy intelligent applications for natural language processing with Python by using industry standard tools and recently popular methods in deep learning Key Features A no-math, code-driven programmer's guide to text processing and NLP Get state of the art results with modern tooling across linguistics, text vectors and machine learning Fundamentals of NLP methods from spaCy, gensim, scikit-learn and PyTorch Book Description NLP in Python is among the most sought after skills among data scientists. With code and relevant case studies, this book will show how you can use industry-grade tools to implement NLP programs capable of learning from relevant data. We will explore many modern methods ranging from spaCy to word vectors that have reinvented NLP. The book takes you from the basics of NLP to building text processing applications. We start with an introduction to the basic vocabulary along with a workflow for building NLP applications. We use industry-grade NLP tools for cleaning and pre-processing text, automatic question and answer generation using linguistics, text embedding, text classifier, and building a chatbot. With each project, you will learn a new concept of NLP. You will learn about entity recognition, part of speech tagging and dependency parsing for Q and A. We use text embedding for both clustering documents and making chatbots, and then build classifiers using scikit-learn. We conclude by deploying these models as REST APIs with Flask. By the end, you will be confident building NLP applications, and know exactly what to look for when approaching new challenges. What you will learn Understand classical linguistics in using English grammar for automatically generating questions and answers from a free text corpus Work with text embedding models for dense number representations of words, subwords and characters in the English language for exploring document clustering Deep Learning in NLP using PyTorch with a code-driven introduction to PyTorch Using an NLP project management Framework for estimating timelines and organizing your project into stages Hack and build a simple chatbot application in 30 minutes Deploy an NLP or machine learning application using Flask as RESTFUL APIs Who this book is for Programmers who wish to build systems that can interpret language. Exposure to Python programming is required. Familiarity with NLP or machine learning vocabulary will be helpful, but not mandatory.

Artificial Intelligence Applications and Innovations Ilias Maglogiannis 2020-05-29 This 2 volume-set of IFIP AICT 583 and 584 constitutes the refereed proceedings of the 16th IFIP WG 12.5 International Conference on Artificial Intelligence Applications and Innovations, AIAI 2020, held in Neos Marmaras, Greece, in June 2020.* The 70 full papers and 5 short papers presented were carefully reviewed and selected from 149 submissions. They cover a broad range

of topics related to technical, legal, and ethical aspects of artificial intelligence systems and their applications and are organized in the following sections: Part I: classification; clustering - unsupervised learning - analytics; image processing; learning algorithms; neural network modeling; object tracking - object detection systems; ontologies - AI; and sentiment analysis - recommender systems. Part II: AI ethics - law; AI constraints; deep learning - LSTM; fuzzy algebra - fuzzy systems; machine learning; medical - health systems; and natural language. *The conference was held virtually due to the COVID-19 pandemic.

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

Build Better Chatbots Rashid Khan 2017-12-13 Learn best practices for building bots by focusing on the technological implementation and UX in this practical book. You will cover key topics such as setting up a development environment for creating chatbots for multiple channels (Facebook Messenger, Skype, and KiK); building a chatbot (design to implementation); integrating to IFTT (If This Then That) and IoT (Internet of Things); carrying out analytics and metrics for chatbots; and most importantly monetizing models and business sense for chatbots. Build Better Chatbots is easy to follow with code snippets provided in the book and complete code open sourced and available to download. With Facebook opening up its Messenger platform for developers, followed by Microsoft opening up Skype for development, a new channel has emerged for brands to acquire, engage, and service customers on chat with chatbots. What You Will Learn Work with the bot development life cycle Master bot UX design Integrate into the bot ecosystem Maximize the business and monetization potential for bots Who This Book Is For Developers, programmers, and hobbyists who have basic programming knowledge. The book can be used by existing chatbot developers to gain a better understanding of analytics and the business side of bots.

Building Chatbots with Python Sumit Raj 2019 Build your own chatbot using Python and open source tools. This book begins with an introduction to chatbots where you will gain vital information on their architecture. You will then dive straight into natural language processing with the natural language toolkit (NLTK) for building a custom language processing platform for your chatbot. With this foundation, you will take a look at different natural language processing techniques so that you can choose the right one for you. The next

stage is to learn to build a chatbot using the API.ai platform and define its intents and entities. During this example, you will learn to enable communication with your bot and also take a look at key points of its integration and deployment. The final chapter of Building Chatbots with Python teaches you how to build, train, and deploy your very own chatbot. Using open source libraries and machine learning techniques you will learn to predict conditions for your bot and develop a conversational agent as a web application. Finally you will deploy your chatbot on your own server with AWS. You will: Gain the basics of natural language processing using Python Collect data and train your data for the chatbot Build your chatbot from scratch as a web app Integrate your chatbots with Facebook, Slack, and Telegram Deploy chatbots on your own server.

Natural Language Processing with PyTorch Delip Rao 2019-01-22 Natural Language Processing (NLP) provides boundless opportunities for solving problems in artificial intelligence, making products such as Amazon Alexa and Google Translate possible. If you're a developer or data scientist new to NLP and deep learning, this practical guide shows you how to apply these methods using PyTorch, a Python-based deep learning library. Authors Delip Rao and Brian McMahon provide you with a solid grounding in NLP and deep learning algorithms and demonstrate how to use PyTorch to build applications involving rich representations of text specific to the problems you face. Each chapter includes several code examples and illustrations. Explore computational graphs and the supervised learning paradigm Master the basics of the PyTorch optimized tensor manipulation library Get an overview of traditional NLP concepts and methods Learn the basic ideas involved in building neural networks Use embeddings to represent words, sentences, documents, and other features Explore sequence prediction and generate sequence-to-sequence models Learn design patterns for building production NLP systems

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.

Building an Enterprise Chatbot Abhishek Singh 2019-09-13 Explore the adoption of chatbots in business by focusing on the design, deployment, and continuous improvement of chatbots in a business, with a single use-case from the banking and insurance sector. This book starts by identifying the business processes in the banking and insurance industry. This involves data collection from sources such as conversations from customer service centers, online chats, emails, and other NLP sources. You'll then design the solution architecture of the chatbot. Once the architecture is framed, the author goes on to explain natural language understanding (NLU), natural language processing (NLP), and natural language generation (NLG) with examples. In the next sections, you'll design and implement the backend framework of a typical chatbot from scratch. You will also explore some popular open-source chatbot frameworks such as Dialogflow and LUIS. The authors then explain how you can integrate various third-party services and enterprise databases with the custom chatbot framework. In the final section, you'll discuss how to deploy the custom chatbot framework on the AWS cloud. By the end of Building an Enterprise Chatbot, you will be able to design and develop an enterprise-ready conversational chatbot using an open source development platform to serve the end user. What You Will Learn Identify business processes where chatbots could be used Focus on building a chatbot for one industry and one use-case rather than building a ubiquitous and generic chatbot Design the solution architecture for a chatbot Integrate chatbots with internal data sources using APIs Discover the differences between natural language understanding (NLU), natural language processing (NLP), and natural language generation (NLG) Work with deployment and continuous improvement through representational learning Who This Book Is For Data scientists and enterprise architects who are currently looking to deploy chatbot solutions to their business.