Machine Learning With Python Cookbook: Practical Solutions From Preprocessing To Deep Learning

Solve common and not-so-common financial problems using Python libraries suc NumPy, SciPy, and pandas Key Features Use powerful Python libraries such as pa NumPy, and SciPy to analyze your financial data Explore unique recipes for finance data analysis and processing with Python Estimate popular financial models such CAPM and GARCH using a problem-solution approach Book Description Python is of the most popular programming languages used in the financial industry, with set of accompanying libraries. In this book, you'll cover different ways of downlo financial data and preparing it for modeling. You'll calculate popular indicators us technical analysis, such as Bollinger Bands, MACD, RSI, and backtest automatic t strategies. Next, you'll cover time series analysis and models, such as exponentia smoothing, ARIMA, and GARCH (including multivariate specifications), before expl the popular CAPM and the Fama-French three-factor model. You'll then discover optimize asset allocation and use Monte Carlo simulations for tasks such as calc the price of American options and estimating the Value at Risk (VaR). In later ch you'll work through an entire data science project in the financial domain. You'll learn how to solve the credit card fraud and default problems using advanced cl such as random forest, XGBoost, LightGBM, and stacked models. You'll then be a tune the hyperparameters of the models and handle class imbalance. Finally, you on learning how to use deep learning (PyTorch) for approaching financial tasks. end of this book, you'll have learned how to effectively analyze financial data usi recipe-based approach. What you will learn Download and preprocess financial d from different sources Backtest the performance of automatic trading strategie world setting Estimate financial econometrics models in Python and interpret th results Use Monte Carlo simulations for a variety of tasks such as derivatives va and risk assessment Improve the performance of financial models with the lates libraries Apply machine learning and deep learning techniques to solve different financial problems Understand the different approaches used to model financial series data Who this book is for This book is for financial analysts, data analysts Python developers who want to learn how to implement a broad range of tasks finance domain. Data scientists looking to devise intelligent financial strategies t perform efficient financial analysis will also find this book useful. Working knowle the Python programming language is mandatory to grasp the concepts covered book effectively.

Deep learning doesn't have to be intimidating. Until recently, this machine-learnin method required years of study, but with frameworks such as Keras and Tensor software engineers without a background in machine learning can quickly enter With the recipes in this cookbook, you'll learn how to solve deep-learning problem classifying and generating text, images, and music. Each chapter consists of sev recipes needed to complete a single project, such as training a music recommen system. Author Douwe Osinga also provides a chapter with half a dozen techniqu

help you if you're stuck. Examples are written in Python with code available on G as a set of Python notebooks. You'll learn how to: Create applications that will s real users Use word embeddings to calculate text similarity Build a movie recomm system based on Wikipedia links Learn how AIs see the world by visualizing their state Build a model to suggest emojis for pieces of text Reuse pretrained netwo build an inverse image search service Compare how GANs, autoencoders and LST generate icons Detect music styles and index song collections

Gain the confidence you need to apply machine learning in your daily work. With practical guide, author Matthew Kirk shows you how to integrate and test mach learning algorithms in your code, without the academic subtext. Featuring graphs highlighted code examples throughout, the book features tests with Python's Nu Pandas, Scikit-Learn, and SciPy data science libraries. If you're a software engine business analyst interested in data science, this book will help you: Reference re examples to test each algorithm through engaging, hands-on exercises Apply tes development (TDD) to write and run tests before you start coding Explore techn improving your machine-learning models with data extraction and feature develop Watch out for the risks of machine learning, such as underfitting or overfitting with K-Nearest Neighbors, neural networks, clustering, and other algorithms

DescriptionThis book provides the concept of machine learning with mathematica explanation and programming examples. Every chapter starts with fundamentals technique and working example on the real-world dataset. Along with the advice applying algorithms, each technique is provided with advantages and disadvantag the data.In this book we provide code examples in python. Python is the most su worldwide accepted language for this. First, it is free and open source. It contain good support from open community. It contains a lot of library, so you don't nee everything. Also, it is scalable for large amount of data and suitable for big data technologies.This book:Covers all major areas in Machine Learning.Topics are discussed with graphical explanations.Comparison of different Machine Learning methods to solve any problem.Methods to handle real-world noisy data before a any Machine Learning algorithm.Python code example for each concept discussed.Jupyter notebook scripts are provided with dataset used to test and t algorithms ContentsIntroduction to Machine Learning Understanding Python Fea Engineering Data VisualisationBasic and Advanced Regression techniquesClassifica Un Supervised LearningText AnalysisNeural Network and Deep Learning Recommendation System Time Series Analysis

Discover powerful ways to effectively solve real-world machine learning problems key libraries including scikit-learn, TensorFlow, and PyTorch Key Features Learn a implement machine learning algorithms in a variety of real-life scenarios Cover a of tasks catering to supervised, unsupervised and reinforcement learning techni easy-to-follow code solutions for tackling common and not-so-common challenge Description This eagerly anticipated second edition of the popular Python Machin Learning Cookbook will enable you to adopt a fresh approach to dealing with rea machine learning and deep learning tasks. With the help of over 100 recipes, you

learn to build powerful machine learning applications using modern libraries from Python ecosystem. The book will also guide you on how to implement various ma learning algorithms for classification, clustering, and recommendation engines, us recipe-based approach. With emphasis on practical solutions, dedicated sections book will help you to apply supervised and unsupervised learning techniques to r world problems. Toward the concluding chapters, you will get to grips with recip teach you advanced techniques including reinforcement learning, deep neural net and automated machine learning. By the end of this book, you will be equipped w skills you need to apply machine learning techniques and leverage the full capabil the Python ecosystem through real-world examples. What you will learn Use pred modeling and apply it to real-world problems Explore data visualization technique interact with your data Learn how to build a recommendation engine Understand interact with text data and build models to analyze it Work with speech data an recognize spoken words using Hidden Markov Models Get well versed with reinforcement learning, automated ML, and transfer learning Work with image da build systems for image recognition and biometric face recognition Use deep neu networks to build an optical character recognition system Who this book is for T is for data scientists, machine learning developers, deep learning enthusiasts and programmers who want to solve real-world challenges using machine-learning techniques and algorithms. If you are facing challenges at work and want ready-code solutions to cover key tasks in machine learning and the deep learning dom this book is what you need. Familiarity with Python programming and machine le concepts will be useful.

Extract accurate information from data to train and improve machine learning m using NumPy, SciPy, pandas, and scikit-learn libraries Key Features Discover solut for feature generation, feature extraction, and feature selection Uncover the end feature engineering process across continuous, discrete, and unstructured datas Implement modern feature extraction techniques using Python's pandas, scikit-le SciPy and NumPy libraries Book Description Feature engineering is invaluable for developing and enriching your machine learning models. In this cookbook, you will with the best tools to streamline your feature engineering pipelines and techniqu simplify and improve the quality of your code. Using Python libraries such as pan scikit-learn, Featuretools, and Feature-engine, you'll learn how to work with both continuous and discrete datasets and be able to transform features from unstru datasets. You will develop the skills necessary to select the best features as we most suitable extraction techniques. This book will cover Python recipes that wil you automate feature engineering to simplify complex processes. You'll also get with different feature engineering strategies, such as the box-cox transform, po transform, and log transform across machine learning, reinforcement learning, an natural language processing (NLP) domains. By the end of this book, you'll have discovered tips and practical solutions to all of your feature engineering problem you will learn Simplify your feature engineering pipelines with powerful Python pa Get to grips with imputing missing values Encode categorical variables with a wi

techniques Extract insights from text quickly and effortlessly Develop features fr
transactional data and time series data Derive new features by combining existin
variables Understand how to transform, discretize, and scale your variables Creat
informative variables from date and time Who this book is for This book is for ma
learning professionals, AI engineers, data scientists, and NLP and reinforcement
learning engineers who want to optimize and enrich their machine learning mode
the best features. Knowledge of machine learning and Python coding will assist y
understanding the concepts covered in this book.

If you're a data scientist already familiar with Python but not Scikit-Learn, or are
familiar with other programming languages like R and want to take the plunge w
gold standard of Python machine learning libraries, then this is the book for you.
Every other day we hear about new ways to put deep learning to good use: impr
medical imaging, accurate credit card fraud detection, long range weather foreca
and more. PyTorch puts these superpowers in your hands, providing a comfortab
Python experience that gets you started quickly and then grows with you as you
deep learning skills—become more sophisticated. Deep Learning with PyTorch wil
that journey engaging and fun. Summary Every other day we hear about new way
deep learning to good use: improved medical imaging, accurate credit card fraud
detection, long range weather forecasting, and more. PyTorch puts these superp
your hands, providing a comfortable Python experience that gets you started qui
then grows with you as you—and your deep learning skills—become more sophis
Deep Learning with PyTorch will make that journey engaging and fun. Foreword b
Soumith Chintala, Cocreator of PyTorch. Purchase of the print book includes a fr
eBook in PDF, Kindle, and ePub formats from Manning Publications. About the
technology Although many deep learning tools use Python, the PyTorch library is
Pythonic. Instantly familiar to anyone who knows PyData tools like NumPy and sc
learn, PyTorch simplifies deep learning without sacrificing advanced features. It's
excellent for building quick models, and it scales smoothly from laptop to enterpr
Because companies like Apple, Facebook, and JPMorgan Chase rely on PyTorch, it'
great skill to have as you expand your career options. It's easy to get started wi
PyTorch. It minimizes cognitive overhead without sacrificing the access to advanc
features, meaning you can focus on what matters the most - building and trainin
latest and greatest deep learning models and contribute to making a dent in the
PyTorch is also a snap to scale and extend, and it partners well with other Pytho
tooling. PyTorch has been adopted by hundreds of deep learning practitioners and
several first-class players like FAIR, OpenAI, FastAI and Purdue. About the book De
Learning with PyTorch teaches you to create neural networks and deep learning
with PyTorch. This practical book quickly gets you to work building a real-world
example from scratch: a tumor image classifier. Along the way, it covers best pra
for the entire DL pipeline, including the PyTorch Tensor API, loading data in Pytho
monitoring training, and visualizing results. After covering the basics, the book w
you on a journey through larger projects. The centerpiece of the book is a neural
designed for cancer detection. You'll discover ways for training networks with lin

inputs and start processing data to get some results. You'll sift through the unr
initial results and focus on how to diagnose and fix the problems in your neural r
Finally, you'll look at ways to improve your results by training with augmented da
make improvements to the model architecture, and perform other fine tuning. Wl
inside Training deep neural networks Implementing modules and loss functions Ut
pretrained models from PyTorch Hub Exploring code samples in Jupyter Noteboob
About the reader For Python programmers with an interest in machine learning. A
the author Eli Stevens had roles from software engineer to CTO, and is currently
on machine learning in the self-driving-car industry. Luca Antiga is cofounder of a
engineering company and an AI tech startup, as well as a former PyTorch contrib
Thomas Viehmann is a PyTorch core developer and machine learning trainer and
consultant. consultant based in Munich, Germany and a PyTorch core developer. '
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using tensors 5 The mechanics of learning 6 Using a neural network to fit the da
Telling birds from airplanes: Learning from images 8 Using convolutions to genera
PART 2 - LEARNING FROM IMAGES IN THE REAL WORLD: EARLY DETECTION
OF LUNG CANCER 9 Using PyTorch to fight cancer 1O Combining data sources int
unified dataset 11 Training a classification model to detect suspected tumors 12
Improving training with metrics and augmentation 13 Using segmentation to find
suspected nodules 14 End-to-end nodule analysis, and where to go next PART 3
DEPLOYMENT 15 Deploying to production

TensorFlow 1.x Deep Learning Cookbook

Machine Learning with Python for Everyone

Over 7O recipes for creating, engineering, and transforming features to build ma
learning models

Recipes for Mastering Python 3

Introducing Data Science

Over 8O recipes on how to implement machine learning algorithms for building se
systems using Python

Python Deep Learning Cookbook

Python Machine Learning By Example

Machine Learning for Time Series Forecasting with Python

Machine Learning with Python Cookbook

Practical Solutions from Preprocessing to Deep Learning

Machine Learning Cookbook with Python

A Guide for Data Scientists

This book focuses on expert-level explanations and implementations of scalable
reinforcement learning algorithms and approaches. Starting with the fundamenta
the book covers state-of-the-art methods from bandit problems to meta-
reinforcement learning. You'll also explore practical examples inspired by real-life
problems from the industry.

If you need help writing programs in Python 3, or want to update older Python 2

code, this book is just the ticket. Packed with practical recipes written and teste
with Python 3.3, this unique cookbook is for experienced Python programmers w
want to focus on modern tools and idioms. Inside, you'll find complete recipes fo
more than a dozen topics, covering the core Python language as well as tasks
common to a wide variety of application domains. Each recipe contains code
samples you can use in your projects right away, along with a discussion about h
and why the solution works. Topics include: Data Structures and Algorithms
Strings and Text Numbers, Dates, and Times Iterators and Generators Files and I/
Data Encoding and Processing Functions Classes and Objects Metaprogramming
Modules and Packages Network and Web Programming Concurrency Utility
Scripting and System Administration Testing, Debugging, and Exceptions C
Extensions

This practical guide provides nearly 200 self-contained recipes to help you solve
machine learning challenges you may encounter in your daily work. If you're
comfortable with Python and its libraries, including pandas and scikit-learn, you'll
be able to address specific problems such as loading data, handling text or
numerical data, model selection, and dimensionality reduction and many other
topics. Each recipe includes code that you can copy and paste into a toy datase
ensure that it actually works. From there, you can insert, combine, or adapt the
code to help construct your application. Recipes also include a discussion that
explains the solution and provides meaningful context. This cookbook takes you
beyond theory and concepts by providing the nuts and bolts you need to constru
working machine learning applications. You'll find recipes for: Vectors, matrices,
and arrays Handling numerical and categorical data, text, images, and dates and
times Dimensionality reduction using feature extraction or feature selection Mod
evaluation and selection Linear and logical regression, trees and forests, and k-
nearest neighbors Support vector machines (SVM), naïve Bayes, clustering, and
neural networks Saving and loading trained models

The book shows you how to view data from multiple perspectives, including data
frame and column attributes. You will cover common and not-so-common
challenges that are faced while cleaning messy data for complex situations. You
learn to manipulate data and get them down to a form that can be useful for ma
the right decisions.

100 recipes that teach you how to perform various machine learning tasks in th
real world About This Book Understand which algorithms to use in a given contex
with the help of this exciting recipe-based guide Learn about perceptrons and se
how they are used to build neural networks Stuck while making sense of images
text, speech, and real estate? This guide will come to your rescue, showing you I
to perform machine learning for each one of these using various techniques Who
This Book Is For This book is for Python programmers who are looking to use
machine-learning algorithms to create real-world applications. This book is friend
to Python beginners, but familiarity with Python programming would certainly be
useful to play around with the code. What You Will Learn Explore classification

algorithms and apply them to the income bracket estimation problem Use predict modeling and apply it to real-world problems Understand how to perform market segmentation using unsupervised learning Explore data visualization techniques to interact with your data in diverse ways Find out how to build a recommendation engine Understand how to interact with text data and build models to analyze it Work with speech data and recognize spoken words using Hidden Markov Models Analyze stock market data using Conditional Random Fields Work with image data and build systems for image recognition and biometric face recognition Grasp how to use deep neural networks to build an optical character recognition system In Detail Machine learning is becoming increasingly pervasive in the modern data-driven world. It is used extensively across many fields such as search engines, robotics, self-driving cars, and more. With this book, you will learn how to perform various machine learning tasks in different environments. We'll start by exploring a range of real-life scenarios where machine learning can be used, and look at various building blocks. Throughout the book, you'll use a wide variety of machine learning algorithms to solve real-world problems and use Python to implement these algorithms. You'll discover how to deal with various types of data and explore the differences between machine learning paradigms such as supervised and unsupervised learning. We also cover a range of regression techniques, classifica algorithms, predictive modeling, data visualization techniques, recommendation engines, and more with the help of real-world examples. Style and approach You will explore various real-life scenarios in this book where machine learning can be used, and learn about different building blocks of machine learning using independent recipes in the book.

Take the next step in implementing various common and not-so-common neural networks with Tensorflow 1.x About This Book Skill up and implement tricky neural networks using Google's TensorFlow 1.x An easy-to-follow guide that lets you explore reinforcement learning, GANs, autoencoders, multilayer perceptrons and more. Hands-on recipes to work with Tensorflow on desktop, mobile, and clo environment Who This Book Is For This book is intended for data analysts, data scientists, machine learning practitioners and deep learning enthusiasts who war perform deep learning tasks on a regular basis and are looking for a handy guide they can refer to. People who are slightly familiar with neural networks, and now want to gain expertise in working with different types of neural networks and datasets, will find this book quite useful. What You Will Learn Install TensorFlow and use it for CPU and GPU operations Implement DNNs and apply them to solve different AI-driven problems. Leverage different data sets such as MNIST, CIFAR-1O, and Youtube8m with TensorFlow and learn how to access and use the in your code. Use TensorBoard to understand neural network architectures, optimize the learning process, and peek inside the neural network black box. Use different regression techniques for prediction and classification problems Build single and multilayer perceptrons in TensorFlow Implement CNN and RNN in TensorFlow, and use it to solve real-world use cases. Learn how restricted

Boltzmann Machines can be used to recommend movies. Understand the implementation of Autoencoders and deep belief networks, and use them for emotion detection. Master the different reinforcement learning methods to implement game playing agents. GANs and their implementation using TensorFlow. In Detail Deep neural networks (DNNs) have achieved a lot of success in the field computer vision, speech recognition, and natural language processing. The entire world is filled with excitement about how deep networks are revolutionizing artificial intelligence. This exciting recipe-based guide will take you from the realm of DNN theory to implementing them practically to solve the real-life problems in artificial intelligence domain. In this book, you will learn how to efficiently use TensorFlow, Google's open source framework for deep learning. You will implement different deep learning networks such as Convolutional Neural Network (CNNs), Recurrent Neural Networks (RNNs), Deep Q-learning Networks (DQNs), and Generative Adversarial Networks (GANs) with easy to follow independent recipes. You will learn how to make Keras as backend with TensorFlow. With a problem-solution approach, you will understand how to implement different deep neural architectures to carry out complex tasks at work. You will learn the performance of different DNNs on some popularly used data sets such as MNIST, CIFAR-10, Youtube8m, and more. You will not only learn about the different mobile and embedded platforms supported by TensorFlow but also how to set up cloud platforms for deep learning applications. Get a sneak peek of TPU architecture and how they will affect DNN future. By using crisp, no-nonsense recipes, you will become an expert in implementing deep learning techniques in growing real-world applications and research areas such as reinforcement learning, GANs, autoencoders and more. Style and approach This book consists of hands-on recipes where you'll deal with real-world problems. You'll execute a series of tasks as you walk through data mining challenges using TensorFlow 1.x. Your one-stop solution for common and not-so-common pain points, this is a book that you must have on the shelf.

Unlock the groundbreaking advances of deep learning with this extensively revised new edition of the bestselling original. Learn directly from the creator of Keras and master practical Python deep learning techniques that are easy to apply in the real world. In Deep Learning with Python, Second Edition you will learn: Deep learning from first principles Image classification and image segmentation Timeseries forecasting Text classification and machine translation Text generation, neural style transfer, and image generation Deep Learning with Python has taught thousands of readers how to put the full capabilities of deep learning into action. This extensively revised second edition introduces deep learning using Python and Keras, and is loaded with insights for both novice and experienced ML practitioners. You'll learn practical techniques that are easy to apply in the real world, and important theory for perfecting neural networks. Purchase of the print book includes a free eBook PDF, Kindle, and ePub formats from Manning Publications. About the technology Recent innovations in deep learning unlock exciting new software capabilities like

automated language translation, image recognition, and more. Deep learning is
quickly becoming essential knowledge for every software developer, and modern
tools like Keras and TensorFlow put it within your reach—even if you have no
background in mathematics or data science. This book shows you how to get st
About the book Deep Learning with Python, Second Edition introduces the field
deep learning using Python and the powerful Keras library. In this revised and
expanded new edition, Keras creator François Chollet offers insights for both no
and experienced machine learning practitioners. As you move through this book,
you'll build your understanding through intuitive explanations, crisp illustrations,
and clear examples. You'll quickly pick up the skills you need to start developing
deep-learning applications. What's inside Deep learning from first principles Image
classification and image segmentation Time series forecasting Text classification
machine translation Text generation, neural style transfer, and image generation
About the reader For readers with intermediate Python skills. No previous
experience with Keras, TensorFlow, or machine learning is required. About the
author François Chollet is a software engineer at Google and creator of the Kera
deep-learning library. Table of Contents 1 What is deep learning? 2 The
mathematical building blocks of neural networks 3 Introduction to Keras and
TensorFlow 4 Getting started with neural networks: Classification and regression
Fundamentals of machine learning 6 The universal workflow of machine learning
Working with Keras: A deep dive 8 Introduction to deep learning for computer
vision 9 Advanced deep learning for computer vision 10 Deep learning for timese
11 Deep learning for text 12 Generative deep learning 13 Best practices for the
world 14 Conclusions
Solve different problems in modelling deep neural networks using Python,
Tensorflow, and Keras with this practical guide About This Book Practical recipes
on training different neural network models and tuning them for optimal
performance Use Python frameworks like TensorFlow, Caffe, Keras, Theano for
Natural Language Processing, Computer Vision, and more A hands-on guide
covering the common as well as the not so common problems in deep learning u
Python Who This Book Is For This book is intended for machine learning
professionals who are looking to use deep learning algorithms to create real-wo
applications using Python. Thorough understanding of the machine learning
concepts and Python libraries such as NumPy, SciPy and scikit-learn is expected.
Additionally, basic knowledge in linear algebra and calculus is desired. What You
Will Learn Implement different neural network models in Python Select the best
Python framework for deep learning such as PyTorch, Tensorflow, MXNet and
Keras Apply tips and tricks related to neural networks internals, to boost learning
performances Consolidate machine learning principles and apply them in the deep
learning field Reuse and adapt Python code snippets to everyday problems Evalua
the cost/benefits and performance implication of each discussed solution In Deta
Deep Learning is revolutionizing a wide range of industries. For many applications
deep learning has proven to outperform humans by making faster and more

accurate predictions. This book provides a top-down and bottom-up approach to demonstrate deep learning solutions to real-world problems in different areas. These applications include Computer Vision, Natural Language Processing, Time Series, and Robotics. The Python Deep Learning Cookbook presents technical solutions to the issues presented, along with a detailed explanation of the soluti Furthermore, a discussion on corresponding pros and cons of implementing the proposed solution using one of the popular frameworks like TensorFlow, PyTorch Keras and CNTK is provided. The book includes recipes that are related to the bas concepts of neural networks. All techniques s, as well as classical networks topologies. The main purpose of this book is to provide Python programmers a detailed list of recipes to apply deep learning to common and not-so-common scenarios. Style and approach Unique blend of independent recipes arranged in th most logical manner

Python Cookbook
Concepts, Tools, and Techniques to Build Intelligent Systems
Modern techniques and Python tools to detect and remove dirty data and extrac key insights
Deep Learning Cookbook
Practical Recipes to Get Started Quickly
TensorFlow Machine Learning Cookbook
Keras Deep Learning Cookbook
Scikit-Learn Cookbook
Machine Learning Using TensorFlow Cookbook
Python Machine Learning Cookbook
Over 90 unique recipes to solve artificial-intelligence driven problems with Pytho
Deep Learning with Python
Essential Tools for Working with Data

This book presents practical solutions to the most common reinforcement learning problems. The recipes in this book will help you understand the fundamental concepts to develop popular RL algorithms. You will gain practical experience in the RL domain using the modern offerings of the PyTorch 1.x library.
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 ScienceIntroducing 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

Intended to anyone interested in numerical computing and data science: students, researchers, teachers, engineers, analysts, hobbyists... Basic knowledge of Python/NumPy is recommended. Some skills in mathematics will help you understand the theory behind the computational methods. This cookbook will help you to gain a solid understanding of deep reinforcement learning (RL) algorithms with the help of concise, easy-to-follow implementations from scratch. You'll learn how to implement these algorithms with minimal code and develop AI applications to solve real-world and business problems using RL.

This book uses a recipe-based approach to showcase the power of machine learning algorithms to build ensemble models using Python libraries. Through this book, you will be able to pick up the code, understand in depth how it works, execute and implement it efficiently. This will be a desk reference to implement a wide range of tasks and solve ...

Learn how to apply the principles of machine learning to time series modeling with this indispensable resource Machine Learning for Time Series Forecasting with Python is an incisive and straightforward examination of one of the most crucial elements of decision-making in finance, marketing, education, and healthcare: time series modeling. Despite the centrality of time series forecasting, few business analysts are

familiar with the power or utility of applying machine learning to time series modeling. Author Francesca Lazzeri, a distinguished machine learning scientist and economist, corrects that deficiency by providing readers with comprehensive and approachable explanation and treatment of the application of machine learning to time series forecasting. Written for readers who have little to no experience in time series forecasting or machine learning, the book comprehensively covers all the topics necessary to: Understand time series forecasting concepts, such as stationarity, horizon, trend, and seasonality Prepare time series data for modeling Evaluate time series forecasting models' performance and accuracy Understand when to use neural networks instead of traditional time series models in time series forecasting Machine Learning for Time Series Forecasting with Python is full real-world examples, resources and concrete strategies to help readers explore and transform data and develop usable, practical time series forecasts. Perfect for entry-level data scientists, business analysts, developers, and researchers, this book is an invaluable and indispensable guide to the fundamental and advanced concepts of machine learning applied to time series modeling.

This book shows readers how they can successfully analyze data using only two core machine learning algorithms---and how to do so using the popular Python programming language. These algorithms deal with common scenarios faced by all data analysts and data scientists. This book focuses on two algorithm families (linear methods and ensemble methods) that effectively predict outcomes. This type of problem covers a multitude of use cases (what ad to place on a web page, predicting prices in securities markets, detecting credit card fraud, etc.). The focus on two families gives enough room for full descriptions of the mechanisms at work in the algorithms. Then the code examples serve to illustrate the workings of the machinery with specific hackable code. The author will explain in simple terms, using no complex math, how these algorithms work, and will then show how to apply them in Python. He will also provide advice on how to select from among these algorithms, and will show how to prepare the data, and how to use the trained models in practice. The author begins with an overview of the two core algorithms, explaining the types of problems solved by each one. He then introduces a core set of Python programming techniques that can be used to apply these algorithms. The author shows various techniques for building predictive models that solve a range of problems, from simple to complex; he also shows how to measure the performance of each model to ensure you use the right one. The following chapters provide a deep dive into each of the two algorithms: penalized linear regression and ensemble methods. Chapters will show how to apply each algorithm in Python. Readers can directly use the sample code to build their own solutions.

Machine learning has become an integral part of many commercial applications and research projects, but this field is not exclusive to large companies with extensive research teams. If you use Python, even as a beginner, this book will teach you practical ways to build your own machine learning solutions. With all the data available today, machine learning applications are limited only by your imagination. You'll learn the steps necessary to create a successful machine-learning application with Python and the scikit-learn library. Authors Andreas Müller and Sarah Guido focus on the practical aspects of using machine learning algorithms, rather than the math behind them. Familiarity with the NumPy and matplotlib libraries will help you get even more from this book. With this book, you'll learn: Fundamental concepts and applications of machine learning Advantages and shortcomings of widely used machine learning algorithms How to represent data processed by machine learning, including which data aspects to focus on Advanced methods for model evaluation and parameter tuning The concept of pipelines for chaining models and encapsulating your workflow Methods for working with text data, including text-specific processing techniques Suggestions for improving your machine learning and data science skills

Essential Techniques for Predictive Analysis

Over 50 recipes for applying modern Python libraries to financial data analysis

Build next-generation, self-learning models using reinforcement learning techniques and best practices

Introduction to Machine Learning with Python

Create ML and Data Analytics Projects Using Some Amazing Open Datasets

Python Feature Engineering Cookbook

Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow

A Test-Driven Approach

Over 35 practical recipes to explore ensemble machine learning techniques using Python

Over 75 practical recipes on neural network modeling, reinforcement learning, and transfer learning using Python

IPython Interactive Computing and Visualization Cookbook

Create powerful machine learning algorithms with TensorFlow

Over 60 recipes to design, develop, and deploy self-learning AI models using Python

Leverage the power of deep learning and Keras to develop smarter and more efficient data models Key Features Understand different neural networks and their implementation using Keras Explore recipes for training and fine-tuning your neural network models Put your deep learning knowledge to practice with real-world use-

cases, tips, and tricks Book Description Keras has quickly emerged as a popular deep learning library. Written in Python, it allows you to train convolutional as well as recurrent neural networks with speed and accuracy. The Keras Deep Learning Cookbook shows you how to tackle different problems encountered while training efficient deep learning models, with the help of the popular Keras library. Starting with installing and setting up Keras, the book demonstrates how you can perform deep learning with Keras in the TensorFlow. From loading data to fitting and evaluating your model for optimal performance, you will work through a step-by-step process to tackle every possible problem faced while training deep models. You will implement convolutional and recurrent neural networks, adversarial networks, and more with the help of this handy guide. In addition to this, you will learn how to train these models for real-world image and language processing tasks. By the end of this book, you will have a practical, hands-on understanding of how you can leverage the power of Python and Keras to perform effective deep learning What you will learn Install and configure Keras in TensorFlow Master neural network programming using the Keras library Understand the different Keras layers Use Keras to implement simple feed-forward neural networks, CNNs and RNNs Work with various datasets and models used for image and text classification Develop text summarization and reinforcement learning models using Keras Who this book is for Keras Deep Learning Cookbook is for you if you are a data scientist or machine learning expert who wants to find practical solutions to common problems encountered while training deep learning models. A basic understanding of Python and some experience in machine learning and neural networks is required for this book.

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
This book is designed to guide you through TensorFlow and how to use it effectively. Throughout the book, you will work through recipes and get hands-on experience to perform complex data computations, gain insights into your data, and more.
Learn how to apply modern AI to create powerful cybersecurity solutions for malware, pentesting, social engineering, data privacy, and intrusion detection Key Features Manage data of varying complexity to protect your system using the Python ecosystem Apply ML to pentesting, malware, data privacy, intrusion detection system(IDS) and social engineering Automate your daily workflow by addressing various security challenges using the recipes covered in the book Book Description Organizations today face a major threat in terms of cybersecurity, from malicious URLs to credential reuse, and having robust security systems can make all the difference. With this book, you'll learn how to use Python libraries such as TensorFlow and scikit-learn to implement the latest artificial intelligence (AI) techniques and handle challenges faced by

cybersecurity researchers. You'll begin by exploring various machine learning (ML) techniques and tips for setting up a secure lab environment. Next, you'll implement key ML algorithms such as clustering, gradient boosting, random forest, and XGBoost. The book will guide you through constructing classifiers and features for malware, which you'll train and test on real samples. As you progress, you'll build self-learning, reliant systems to handle cybersecurity tasks such as identifying malicious URLs, spam email detection, intrusion detection, network protection, and tracking user and process behavior. Later, you'll apply generative adversarial networks (GANs) and autoencoders to advanced security tasks. Finally, you'll delve into secure and private AI to protect the privacy rights of consumers using your ML models. By the end of this book, you'll have the skills you need to tackle real-world problems faced in the cybersecurity domain using a recipe-based approach. What you will learn Learn how to build malware classifiers to detect suspicious activities Apply ML to generate custom malware to pentest your security Use ML algorithms with complex datasets to implement cybersecurity concepts Create neural networks to identify fake videos and images Secure your organization from one of the most popular threats - insider threats Defend against zero-day threats by constructing an anomaly detection system Detect web vulnerabilities effectively by combining Metasploit and ML Understand how to train a model without exposing the training data Who this book is for This book is for cybersecurity professionals and security researchers who are looking to implement the latest machine learning techniques to boost computer security, and gain insights into securing an organization using red and blue team ML. This recipe-based book will also be useful for data scientists and machine learning developers who want to experiment with smart techniques in the cybersecurity domain. Working knowledge of Python programming and familiarity with cybersecurity fundamentals will help you get the most out of this book.

This practical guide provides nearly 200 self-contained recipes to help you solve machine learning challenges you may encounter in your daily work. If you're comfortable with Python and its libraries, including pandas and scikit-learn, you'll be able to address specific problems such as loading data, handling text or numerical data, model selection, and dimensionality reduction and many other topics. Each recipe includes code that you can copy and paste into a toy dataset to ensure that it actually works. From there, you can insert, combine, or adapt the code to help construct your application. Recipes also include a discussion that explains the solution and provides meaningful

context. This cookbook takes you beyond theory and concepts by providing the nuts and bolts you need to construct working machine learning applications. You'll find recipes for: Vectors, matrices, and arrays Handling numerical and categorical data, text, images, and dates and times Dimensionality reduction using feature extraction or feature selection Model evaluation and selection Linear and logical regression, trees and forests, and k-nearest neighbors Support vector machines (SVM), naïve Bayes, clustering, and neural networks Saving and loading trained models

Learn to use scikit-learn operations and functions for Machine Learning and deep learning applications.About This Book* Handle a variety of machine learning tasks effortlessly by leveraging the power of scikit-learn* Perform supervised and unsupervised learning with ease, and evaluate the performance of your model* Practical, easy to understand recipes aimed at helping you choose the right machine learning algorithmWho This Book Is ForData Analysts already familiar with Python but not so much with scikit-learn, who want quick solutions to the common machine learning problems will find this book to be very useful. If you are a Python programmer who wants to take a dive into the world of machine learning in a practical manner, this book will help you too.What You Will Learn* Build predictive models in minutes by using scikit-learn* Understand the differences and relationships between Classification and Regression, two types of Supervised Learning.* Use distance metrics to predict in Clustering, a type of Unsupervised Learning* Find points with similar characteristics with Nearest Neighbors.* Use automation and cross-validation to find a best model and focus on it for a data product* Choose among the best algorithm of many or use them together in an ensemble.* Create your own estimator with the simple syntax of sklearn* Explore the feed-forward neural networks available in scikit-learnIn DetailPython is quickly becoming the go-to language for analysts and data scientists due to its simplicity and flexibility, and within the Python data space, scikit-learn is the unequivocal choice for machine learning. This book includes walk throughs and solutions to the common as well as the not-so-common problems in machine learning, and how scikit-learn can be leveraged to perform various machine learning tasks effectively.The second edition begins with taking you through recipes on evaluating the statistical properties of data and generates synthetic data for machine learning modelling. As you progress through the chapters, you will comes across recipes that will teach you to implement techniques like data pre-processing, linear regression, logistic regression, K-NN, Naive Bayes,

*classification, decision trees, Ensembles and much more.
Furthermore, you'll learn to optimize your models with multi-
class classification, cross validation, model evaluation and
dive deeper in to implementing deep learning with scikit-learn.
Along with covering the enhanced features on model section, API
and new features like classifiers, regressors and estimators the
book also contains recipes on evaluating and fine-tuning the
performance of your model.By the end of this book, you will have
explored plethora of features offered by scikit-learn for Python
to solve any machine learning problem you come across.Style and
ApproachThis book consists of practical recipes on scikit-learn
that target novices as well as intermediate users. It goes deep
into the technical issues, covers additional protocols, and many
more real-live examples so that you are able to implement it in
your daily life scenarios.*
100 recipes that teach you how to perform various machine
learning tasks in the real worldAbout This Book*Understand which
algorithms to use in a given context with the help of this
exciting recipe-based guide*Learn about perceptrons and see how
they are used to build neural networks*Stuck while making sense
of images, text, speech, and real estate? This guide will come
to your rescue, showing you how to perform machine learning for
each one of these using various techniquesWho This Book Is
ForThis book is for Python programmers who are looking to use
machine-learning algorithms to create real-world applications.
This book is friendly to Python beginners, but familiarity with
Python programming would certainly be useful to play around with
the code.What You Will Learn*Explore classification algorithms
and apply them to the income bracket estimation problem*Use
predictive modeling and apply it to real-world
problems*Understand how to perform market segmentation using
unsupervised learning*Explore data visualization techniques to
interact with your data in diverse ways*Find out how to build a
recommendation engine*Understand how to interact with text data
and build models to analyze it*Work with speech data and
recognize spoken words using Hidden Markov Models*Analyze stock
market data using Conditional Random Fields*Work with image data
and build systems for image recognition and biometric face
recognition*Grasp how to use deep neural networks to build an
optical character recognition systemIn DetailMachine learning is
becoming increasingly pervasive in the modern data-driven world.
It is used extensively across many fields such as search
engines, robotics, self-driving cars, and more.With this book,
you will learn how to perform various machine learning tasks in
different environments. We'll start by exploring a range of real-
life scenarios where machine learning can be used, and look at

various building blocks. Throughout the book, you'll use a wide variety of machine learning algorithms to solve real-world problems and use Python to implement these algorithms.You'll discover how to deal with various types of data and explore the differences between machine learning paradigms such as supervised and unsupervised learning. We also cover a range of regression techniques, classification algorithms, predictive modeling, data visualization techniques, recommendation engines, and more with the help of real-world examples.

Take tiny steps to enter the big world of data science through this interesting guide About This Book Learn the fundamentals of machine learning and build your own intelligent applications Master the art of building your own machine learning systems with this example-based practical guide Work with important classification and regression algorithms and other machine learning techniques Who This Book Is For This book is for anyone interested in entering the data science stream with machine learning. Basic familiarity with Python is assumed. What You Will Learn Exploit the power of Python to handle data extraction, manipulation, and exploration techniques Use Python to visualize data spread across multiple dimensions and extract useful features Dive deep into the world of analytics to predict situations correctly Implement machine learning classification and regression algorithms from scratch in Python Be amazed to see the algorithms in action Evaluate the performance of a machine learning model and optimize it Solve interesting real-world problems using machine learning and Python as the journey unfolds In Detail Data science and machine learning are some of the top buzzwords in the technical world today. A resurging interest in machine learning is due to the same factors that have made data mining and Bayesian analysis more popular than ever. This book is your entry point to machine learning. This book starts with an introduction to machine learning and the Python language and shows you how to complete the setup. Moving ahead, you will learn all the important concepts such as, exploratory data analysis, data preprocessing, feature extraction, data visualization and clustering, classification, regression and model performance evaluation. With the help of various projects included, you will find it intriguing to acquire the mechanics of several important machine learning algorithms - they are no more obscure as they thought. Also, you will be guided step by step to build your own models from scratch. Toward the end, you will gather a broad picture of the machine learning ecosystem and best practices of applying machine learning techniques. Through this book, you will learn to tackle data-driven problems and implement your solutions with

the powerful yet simple language, Python. Interesting and easy-to-follow examples, to name some, news topic classification, spam email detection, online ad click-through prediction, stock prices forecast, will keep you glued till you reach your goal. Style and approach This book is an enticing journey that starts from the very basics and gradually picks up pace as the story unfolds. Each concept is first succinctly defined in the larger context of things, followed by a detailed explanation of their application. Every concept is explained with the help of a project that solves a real-world problem, and involves hands-on work—giving you a deep insight into the world of machine learning. With simple yet rich language—Python—you will understand and be able to implement the examples with ease.

Machine Learning for Cybersecurity Cookbook
Deep Learning with PyTorch
PyTorch 1.x Reinforcement Learning Cookbook
Python Data Cleaning Cookbook
Python for Finance Cookbook
Ensemble Machine Learning Cookbook
Proven recipes for applying AI algorithms and deep learning techniques using TensorFlow 2.x and PyTorch 1.6
Practical Machine Learning with Python
Over 30 recipes for implementing deep neural networks in Python
Python Data Science Handbook
Artificial Intelligence with Python Cookbook
A Problem-Solver's Guide to Building Real-World Intelligent Systems
Scikit-Learn Cookbook - Second Edition

Summary Deep Learning with Python introduces the field of deep learning using the Python language and the powerful Keras library. Written by Keras creator and Google AI researcher François Chollet, this book builds your understanding through intuitive explanations and practical examples. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Machine learning has made remarkable progress in recent years. We went from near-unusable speech and image recognition, to near-human accuracy. We went from machines that couldn't beat a serious Go player, to defeating a world champion. Behind this progress is deep learning—a combination of engineering advances, best practices, and theory that enables a wealth of previously impossible smart applications. About the Book Deep Learning with Python introduces the field of deep learning using the Python language and the powerful Keras library. Written by Keras creator and Google AI researcher François Chollet, this book builds your understanding through intuitive explanations and practical examples. You'll explore challenging concepts and practice with applications in computer vision, natural-language processing, and generative models. By the time you finish, you'll have the knowledge and hands-on skills to apply deep learning in your own projects. What's Inside Deep learning from first principles Setting up your own deep-learning environment Image-classification models Deep learning for text and sequences Neural style transfer, text generation, and image generation About the Reader Readers need intermediate Python skills. No previous experience with Keras, TensorFlow, or machine learning is required. About the Author François Chollet works on deep learning at Google in Mountain View, CA. He

is the creator of the Keras deep-learning library, as well as a contributor to the TensorFlow machine-learning framework. He also does deep-learning research, with a focus on computer vision and the application of machine learning to formal reasoning. His papers have been published at major conferences in the field, including the Conference on Computer Vision and Pattern Recognition (CVPR), the Conference and Workshop on Neural Information Processing Systems (NIPS), the International Conference on Learning Representations (ICLR), and others. Table of Contents PART 1 - FUNDAMENTALS OF DEEP LEARNING What is deep learning? Before we begin: the mathematical building blocks of neural networks Getting started with neural networks Fundamentals of machine learning PART 2 - DEEP LEARNING IN PRACTICE Deep learning for computer vision Deep learning for text and sequences Advanced deep-learning best practices Generative deep learning Conclusions appendix A - Installing Keras and its dependencies on Ubuntu appendix B - Running Jupyter notebooks on an EC2 GPU instance
If you are looking to build next-generation AI solutions for work or even for your pet projects, you'll find this cookbook useful. With the help of easy-to-follow recipes, this book will take you through the advanced AI and machine learning approaches and algorithms that are required to build smart models for problem-solving.
For many researchers, Python is a first-class tool mainly because of its libraries for storing, manipulating, and gaining insight from data. Several resources exist for individual pieces of this data science stack, but only with the Python Data Science Handbook do you get them all—IPython, NumPy, Pandas, Matplotlib, Scikit-Learn, and other related tools. Working scientists and data crunchers familiar with reading and writing Python code will find this comprehensive desk reference ideal for tackling day-to-day issues: manipulating, transforming, and cleaning data; visualizing different types of data; and using data to build statistical or machine learning models. Quite simply, this is the must-have reference for scientific computing in Python. With this handbook, you'll learn how to use: IPython and Jupyter: provide computational environments for data scientists using Python NumPy: includes the ndarray for efficient storage and manipulation of dense data arrays in Python Pandas: features the DataFrame for efficient storage and manipulation of labeled/columnar data in Python Matplotlib: includes capabilities for a flexible range of data visualizations in Python Scikit-Learn: for efficient and clean Python implementations of the most important and established machine learning algorithms
The Complete Beginner's Guide to Understanding and Building Machine Learning Systems with Python Machine Learning with Python for Everyone will help you master the processes, patterns, and strategies you need to build effective learning systems, even if you're an absolute beginner. If you can write some Python code, this book is for you, no matter how little college-level math you know. Principal instructor Mark E. Fenner relies on plain-English stories, pictures, and Python examples to communicate the ideas of machine learning. Mark begins by discussing machine learning and what it can do; introducing key mathematical and computational topics in an approachable manner; and walking you through the first steps in building, training, and evaluating learning systems. Step by step, you'll fill out the components of a practical learning system, broaden your toolbox, and explore some of the field's most sophisticated and exciting techniques. Whether you're a student, analyst, scientist, or hobbyist, this guide's insights will be applicable to every learning system you ever build or use. Understand machine learning algorithms, models, and core machine learning concepts Classify examples with classifiers, and quantify examples with regressors Realistically assess performance of machine learning systems Use feature engineering to smooth rough data into useful forms Chain multiple components into one system and tune its performance Apply machine learning techniques to images and text Connect the core concepts to neural networks and graphical models Leverage the Python scikit-learn library and other powerful tools Register your book for convenient access to downloads, updates, and/or corrections as they become available. See inside book for details.
Through a series of recent breakthroughs, deep learning has boosted the entire field of machine

learning. Now, even programmers who know close to nothing about this technology can use simple, efficient tools to implement programs capable of learning from data. This practical book shows you how. By using concrete examples, minimal theory, and two production-ready Python frameworks—Scikit-Learn and TensorFlow—author Aurélien Géron helps you gain an intuitive understanding of the concepts and tools for building intelligent systems. You'll learn a range of techniques, starting with simple linear regression and progressing to deep neural networks. With exercises in each chapter to help you apply what you've learned, all you need is programming experience to get started. Explore the machine learning landscape, particularly neural nets Use Scikit-Learn to track an example machine-learning project end-to-end Explore several training models, including support vector machines, decision trees, random forests, and ensemble methods Use the TensorFlow library to build and train neural nets Dive into neural net architectures, including convolutional nets, recurrent nets, and deep reinforcement learning Learn techniques for training and scaling deep neural nets

Portable, powerful, and a breeze to use, Python is the popular open source object-oriented programming language used for both standalone programs and scripting applications. It is now being used by an increasing number of major organizations, including NASA and Google.Updated for Python 2.4, The Python Cookbook, 2nd Edition offers a wealth of useful code for all Python programmers, not just advanced practitioners. Like its predecessor, the new edition provides solutions to problems that Python programmers face everyday.It now includes over 200 recipes that range from simple tasks, such as working with dictionaries and list comprehensions, to complex tasks, such as monitoring a network and building a templating system. This revised version also includes new chapters on topics such as time, money, and metaprogramming.Here's a list of additional topics covered: Manipulating text Searching and sorting Working with files and the filesystem Object-oriented programming Dealing with threads and processes System administration Interacting with databases Creating user interfaces Network and web programming Processing XML Distributed programming Debugging and testing Another advantage of The Python Cookbook, 2nd Edition is its trio of authors--three well-known Python programming experts, who are highly visible on email lists and in newsgroups, and speak often at Python conferences.With scores of practical examples and pertinent background information, The Python Cookbook, 2nd Edition is the one source you need if you're looking to build efficient, flexible, scalable, and well-integrated systems.

A Cookbook that will help you implement Machine Learning algorithms and techniques by building real-world projects Ê KEY FEATURESÊ Learn how to handle an entire Machine Learning Pipeline supported with adequate mathematics. Create Predictive Models and choose the right model for various types of Datasets. Learn the art of tuning a model to improve accuracy as per Business requirements. Get familiar with concepts related to Data Analytics with Visualization, Data Science and Machine Learning. DESCRIPTION Machine Learning does not have to be intimidating at all. This book focuses on the concepts of Machine Learning and Data Analytics with mathematical explanations and programming examples. All the codes are written in Python as it is one of the most popular programming languages used for Data Science and Machine Learning. Here I have leveraged multiple libraries like NumPy, Pandas, scikit-learn, etc. to ease our task and not reinvent the wheel. There are five projects in total, each addressing a unique problem. With the recipes in this cookbook, one will learn how to solve Machine Learning problems for real-time data and perform Data Analysis and Analytics, Classification, and beyond. The datasets used are also unique and will help one to think, understand the problem and proceed towards the goal. The book is not saturated with Mathematics, but mostly all the Mathematical concepts are covered for the important topics. Every chapter typically starts with some theory and prerequisites, and then it gradually dives into the implementation of the same concept using Python, keeping a project in the background.Ê Ê WHAT WILL YOU LEARN Understand the working of the O.S.E.M.N. framework in Data Science.Ê Get familiar with the end-to-end

implementation of Machine Learning Pipeline. Learn how to implement Machine Learning algorithms and concepts using Python. Learn how to build a Predictive Model for a Business case. WHO THIS BOOK IS FORÊ This cookbook is meant for anybody who is passionate enough to get into the World of Machine Learning and has a preliminary understanding of the Basics of Linear Algebra, Calculus, Probability, and Statistics. This book also serves as a reference guidebook for intermediate Machine Learning practitioners. Ê TABLE OF CONTENTS 1. Boston Crime 2. World Happiness Report 3. Iris Species 4. Credit Card Fraud Detection 5. Heart Disease UCI

Explore machine learning concepts using the latest numerical computing library — TensorFlow — with the help of this comprehensive cookbook About This Book Your quick guide to implementing TensorFlow in your day-to-day machine learning activities Learn advanced techniques that bring more accuracy and speed to machine learning Upgrade your knowledge to the second generation of machine learning with this guide on TensorFlow Who This Book Is For This book is ideal for data scientists who are familiar with C++ or Python and perform machine learning activities on a day-to-day basis. Intermediate and advanced machine learning implementers who need a quick guide they can easily navigate will find it useful. What You Will Learn Become familiar with the basics of the TensorFlow machine learning library Get to know Linear Regression techniques with TensorFlow Learn SVMs with hands-on recipes Implement neural networks and improve predictions Apply NLP and sentiment analysis to your data Master CNN and RNN through practical recipes Take TensorFlow into production In Detail TensorFlow is an open source software library for Machine Intelligence. The independent recipes in this book will teach you how to use TensorFlow for complex data computations and will let you dig deeper and gain more insights into your data than ever before. You'll work through recipes on training models, model evaluation, sentiment analysis, regression analysis, clustering analysis, artificial neural networks, and deep learning – each using Google's machine learning library TensorFlow. This guide starts with the fundamentals of the TensorFlow library which includes variables, matrices, and various data sources. Moving ahead, you will get hands-on experience with Linear Regression techniques with TensorFlow. The next chapters cover important high-level concepts such as neural networks, CNN, RNN, and NLP. Once you are familiar and comfortable with the TensorFlow ecosystem, the last chapter will show you how to take it to production. Style and approach This book takes a recipe-based approach where every topic is explicated with the help of a real-world example.

Big data, machine learning, and more, using Python tools
Over 100 recipes to progress from smart data analytics to deep learning using real-world datasets, 2nd Edition
TensorFlow 2 Reinforcement Learning Cookbook
Over 50 recipes to help you build, train, and deploy learning agents for real-world applications
MACHINE LEARNING WITH PYTHON
Thoughtful Machine Learning with Python
Mastering Reinforcement Learning with Python
Machine Learning in Python
Deep Learning with Python, Second Edition