TensorFlow 2.0 in Action

Build real-world Artificial Intelligence applications with Python to intelligently interact with the world around you. 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 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 you 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.

TensorFlow 1.x Deep Learning Cookbook

This practical book provides an end-to-end guide to TensorFlow, the leading open source software library that helps you build and train neural networks for deep learning, Natural Language Processing (NLP), speech recognition, and general predictive analytics. The book provides a hands-on approach to TensorFlow fundamentals for a broad technical audience—from data scientists and engineers to students and researchers. The authors begin by working through some basic examples in TensorFlow before diving deeper into topics such as CNN, RNN, LSTM, and GNN. The book is written for those who want to build powerful, robust, and accurate predictive models with the power of TensorFlow, combined with other open source Python libraries. The authors demonstrate TensorFlow projects on Single Board Computers (SBCs).
Machine Learning with TensorFlow 1.x

Delve into neural networks, implement deep learning algorithms, and explore layers of data abstraction with the help of TensorFlow. Key Features Learn how to implement advanced techniques in deep learning with Google's brainchild, TensorFlow Explore deep neural networks and layers of data abstraction with the help of this comprehensive guide Gain real-world contextualization through some deep learning problems concerning research and application

Book Description Deep learning is a branch of machine learning algorithms based on learning multiple levels of abstraction. Neural networks, which are at the core of deep learning, are being used in predictive analytics, computer vision, natural language processing, time series forecasting, and to perform a myriad of other complex tasks. This book is conceived for developers, data analysts, machine learning practitioners and deep learning enthusiasts who want to build powerful, robust, and accurate predictive models with the power of TensorFlow, combined with other open source Python libraries. Throughout the book, you’ll learn how to develop deep learning applications for machine learning systems using Feedforward Neural Networks, Convolutional Neural Networks, Recurrent Neural Networks, Autoencoders, and Factorization Machines. Discover how to attain deep learning programming on GPU in a distributed way. You’ll come away with an in-depth knowledge of machine learning techniques and the skills to apply them to real-world projects. What you will learn Apply deep machine intelligence and GPU computing with TensorFlow Access public datasets and use TensorFlow to load, process, and transform the data Discover how to use the high-level TensorFlow API to build more powerful applications Use deep learning for scalable object detection and mobile computing Train machines quickly to learn from data by exploring reinforcement learning techniques Explore active areas of deep learning research and applications Who this book is for The book is for people interested in machine learning and machine intelligence. A rudimentary level of programming in one language is assumed, as is a basic familiarity with computer science techniques and technologies, including a basic awareness of computer hardware and algorithms. Some competence in mathematics is needed to the level of elementary linear algebra and calculus.

Machine Learning with TensorFlow, Second Edition

We cover advanced deep learning concepts (such as transfer learning, generative adversarial models, and reinforcement learning), and implement them using TensorFlow and Keras. We cover how to build and deploy at scale with distributed models. You will learn to build TensorFlow models using R, Keras, TensorFlow Learn, TensorFlow Slim and Sonnet

TensorFlow 2 Pocket Primer

TensorFlow 2.0 in Action teaches you to use the new features of TensorFlow 2.0 to create advanced deep learning models. TensorFlow is a one-stop solution for building, monitoring, optimizing, and deploying your models. This practical guide to building deep learning models with the new features of TensorFlow 2.0 is filled with engaging projects, simple language, and coverage of the latest algorithms. TensorFlow 2.0 in Action teaches you to use the new features of TensorFlow 2.0 to create advanced deep learning models. You’ll learn by building hands-on projects including an image classifier that can recognize objects, a French-to-English machine translator, and even a neural network that can write fiction. You’ll dive into the details of modern deep learning techniques including both transformer and attention models, and learn how pretrained models can solve your tricky data science problems. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

Programming with TensorFlow

Build machine and deep learning systems with the newly released TensorFlow 2 and Keras for the lab, production, and mobile devices Key Features Introduces and then uses TensorFlow 2 and Keras right from the start Teaches key machine and deep learning techniques Understand the fundamentals of deep learning and machine learning through clear explanations and extensive code samples Book Description Deep Learning with TensorFlow 2 and Keras, Second Edition teaches neural networks and deep learning techniques alongside TensorFlow (TF) and Keras. You’ll learn how to write deep learning applications in the most powerful, popular, and scalable machine learning stack available. TensorFlow is the machine learning library of choice for professional applications, while Keras offers a simple and powerful Python API for accessing TensorFlow. TensorFlow 2 provides full Keras integration, making advanced machine learning easier and more convenient than ever before. This book also introduces neural networks with TensorFlow, runs through the main applications (regression, ConvNets (CNNs),
GANs, RNNs, NLP), covers two working example apps, and then dives into TF in production, TF mobile, and using TensorFlow with AutoML. What you will learn Build machine learning and deep learning systems with TensorFlow 2 and the Keras API Use Regression analysis, the most popular approach to machine learning Understand ConvNets (convolutional neural networks) and how they are essential for deep learning systems such as image classifiers Use GANs (generative adversarial networks) to create new data that fits with existing patterns Discover RNNs (recurrent neural networks) that can process sequences of input intelligently, using one part of a sequence to correctly interpret another Apply deep learning to natural language and interpret natural language texts to produce an appropriate response Train your models on the cloud and put TF to work in real environments Explore how Google tools can automate simple ML workflows without the need for complex modeling Who this book is for This book is for Python developers and data scientists who want to build machine learning and deep learning systems with TensorFlow. Whether or not you have done machine learning before, this book gives you the theory and practice required to use Keras, TensorFlow 2, and AutoML to build machine learning systems.

TensorFlow Machine Learning Projects

Roughly inspired by the human brain, deep neural networks trained with large amounts of data can solve complex tasks with unprecedented accuracy. This practical book provides an end-to-end guide to TensorFlow, the leading open source software library that helps you build and train neural networks for computer vision, natural language processing (NLP), speech recognition, and general predictive analytics. Authors Tom Hope, Yehezkel Resheff, and Itay Lieder provide a hands-on approach to TensorFlow fundamentals for a broad technical audience—from data scientists and engineers to students and researchers. You’ll begin by working through some basic examples in TensorFlow before diving deeper into topics such as neural network architectures, TensorFlow visualization, TensorFlow abstraction libraries, and multithreaded input pipelines. Once you finish this book, you’ll know how to build and deploy production-ready deep learning systems in TensorFlow. Get up and running with TensorFlow, rapidly and painlessly Learn how to use TensorFlow to build deep learning models from the ground up Train popular deep learning models for computer vision and NLP Use extensive abstraction libraries to make development easier and faster Learn how to scale TensorFlow, and use clusters to distribute model training Deploy TensorFlow in a production setting

Hands-On Neural Networks with TensorFlow 2.0

As part of the best-selling Pocket Primer series, this book is designed to introduce beginners to basic machine learning algorithms using TensorFlow 2. It is intended to be a fast-paced introduction to various “core” features of TensorFlow, with code samples that cover machine learning and TensorFlow basics. A comprehensive appendix contains some Keras-based code samples and the underpinnings of MLPs, CNNs, RNNs, and LSTMs. The material in the chapters illustrates how to solve a variety of tasks after which you can do further reading to deepen your knowledge. Companion files with all of the code samples are available for downloading from the publisher by emailing proof of purchase to info@merclearning.com. Features: Uses Python for code samples Covers TensorFlow 2 APIs and Datasets Includes a comprehensive appendix that covers Keras and advanced topics such as NLPs, MLPs, RNNs, LSTMs Features the companion files with all of the source code examples and figures (download from the publisher)

TensorFlow for Deep Learning

Get started with TensorFlow fundamentals to build and train deep learning models with real-world data, practical exercises, and challenging activities Key Features Understand the fundamentals of tensors, neural networks, and deep learning Discover how to implement and fine-tune deep learning models for real-world datasets Build your experience and confidence with hands-on exercises and activities Book Description Getting to grips with tensors, deep learning, and neural networks can be intimidating and confusing for anyone, no matter their experience level. The breadth of information out there, often written at a very high level and aimed at advanced practitioners, can make getting started even more challenging. If this sounds familiar to you, The TensorFlow Workshop is here to help. Combining clear explanations, realistic examples, and plenty of hands-on practice, it'll quickly get you up and running. You'll start off with the basics - learning how to load data into TensorFlow, perform tensor operations, and utilize common optimizers and activation functions. As you progress, you'll experiment with different TensorFlow development tools, including TensorFlow, TensorFlow Hub, and Google Colab, before moving on to solve regression and
classification problems with sequential models. Building on this solid foundation, you'll learn how to tune models and work with different types of neural network, getting hands-on with real-world deep learning applications such as text encoding, temperature forecasting, image augmentation, and audio processing. By the end of this deep learning book, you'll have the skills, knowledge, and confidence to tackle your own ambitious deep learning projects with TensorFlow. What you will learn Get to grips with TensorFlow's mathematical operations Pre-process a wide variety of tabular, sequential, and image data Understand the purpose and usage of different deep learning layers Perform hyperparameter-tuning to prevent overfitting of training data Use pre-trained models to speed up the development of learning models Generate new data based on existing patterns using generative models Who this book is for This TensorFlow book is for anyone who wants to develop their understanding of deep learning and get started building neural networks with TensorFlow. Basic knowledge of Python programming and its libraries, as well as a general understanding of the fundamentals of data science and machine learning, will help you grasp the topics covered in this book more easily.

Tensor Flow Pocket Primer

A comprehensive guide to developing neural network-based solutions using TensorFlow 2.0 Key Features Understand the basics of machine learning and discover the power of neural networks and deep learning Explore the structure of the TensorFlow framework and understand how to transition to TF 2.0 Solve any deep learning problem by developing neural network-based solutions using TF 2.0 Book Description TensorFlow, the most popular and widely used machine learning framework, has made it possible for almost anyone to develop machine learning solutions with ease. With TensorFlow (TF) 2.0, you'll explore a revamped framework structure, offering a wide variety of new features aimed at improving productivity and ease of use for developers. This book covers machine learning with a focus on developing neural network-based solutions. You'll start by getting familiar with the concepts and techniques required to build solutions to deep learning problems. As you advance, you’ll learn how to create classifiers, build object detection and semantic segmentation networks, train generative models, and speed up the development process using TF 2.0 tools such as TensorFlow Datasets and TensorFlow Hub. By the end of this TensorFlow book, you’ll be ready to solve any machine learning problem by developing solutions using TF 2.0 and putting them into production. What you will learn Grasp machine learning and neural network techniques to solve challenging tasks Apply the new features of TF 2.0 to speed up development Use TensorFlow Datasets (tfdts) and the tf.data API to build high-efficiency data input pipelines Perform transfer learning and fine-tuning with TensorFlow Hub Define and train networks to solve object detection and semantic segmentation problems Train Generative Adversarial Networks (GANs) to generate images and data distributions Use the SavedModel file format to put a model, or a generic computational graph, into production Who this book is for If you’re a developer who wants to get started with machine learning and TensorFlow, or a data scientist interested in developing neural network solutions in TF 2.0, this book is for you. Experienced machine learning engineers who want to master the new features of the TensorFlow framework will also find this book useful. Basic knowledge of calculus and a strong understanding of Python programming will help you grasp the topics covered in this book.

Natural Language Processing with TensorFlow

Книга знакомит с основами программной библиотеки TensorFlow и принципами глубокого обучения, начиная с нулевого уровня. В книге рассмотрены базовые вычисления в библиотеке TensorFlow, простые обучающие системы и их построение, полно связные глубокие сети, прототипы и превращение прототипов в высококачественные модели, сверточные нейронные сети и обработка изображений, рекуррентные нейронные сети и наборы естественно-языковых данных, способы обучения с максимизацией подкрепления на примере известных игр, приемы тренинга глубоких сетей с помощью графических и тензорных процессоров.

TensorFlow: Powerful Predictive Analytics with TensorFlow

Deep learning networks are getting smaller. Much smaller. The Google Assistant team can detect words with a model just 14 kilobytes in size—small enough to run on a microcontroller. With this practical book you’ll enter the field of TinyML, where deep learning and embedded systems combine to make astounding things possible with tiny devices. Pete Warden and Daniel Situnayake explain how you can train models small enough to fit into any environment. Ideal for software and hardware developers who want to build embedded systems using machine learning, this guide walks you through creating a series of TinyML projects, step-by-step. No machine learning or microcontroller experience is necessary. Build a speech recognizer, a
camera that detects people, and a magic wand that responds to gestures. Work with Arduino and ultra-low-power microcontrollers. Learn the essentials of ML and how to train your own models. Train models to understand audio, image, and accelerometer data. Explore TensorFlow Lite for Microcontrollers, Google’s toolkit for TinyML. Debug applications and provide safeguards for privacy and security. Optimize latency, energy usage, and model and binary size.

**Hands-On Convolutional Neural Networks with TensorFlow**

This book introduces TensorFlow to people who have some knowledge of Python. Readers will learn about many “core” TensorFlow APIs, Linear Regression, Logistic Regression, and Multilayer Perceptrons. This book is meant to provide both a foundation in TensorFlow and a rudimentary understanding of Deep Learning. Features: A concrete introduction to TensorFlow and useful APIs. Companion files with code from the text. eBook Customers: Companion files are available for downloading with order number/proof of purchase by writing to the publisher at info@merclearning.com.

**TensorFlow 2.0 Computer Vision Cookbook**

Learn how to solve challenging machine learning problems with TensorFlow, Google’s revolutionary new software library for deep learning. If you have some background in basic linear algebra and calculus, this practical book introduces machine-learning fundamentals by showing you how to design systems capable of detecting objects in images, understanding text, analyzing video, and predicting the properties of potential medicines. TensorFlow for Deep Learning teaches concepts through practical examples and helps you build knowledge of deep learning foundations from the ground up. It’s ideal for practicing developers with experience designing software systems, and useful for scientists and other professionals familiar with scripting but not necessarily with designing learning algorithms. Learn TensorFlow fundamentals, including how to perform basic computation. Build simple learning systems to understand their mathematical foundations. Dive into fully connected deep networks used in thousands of applications. Turn prototypes into high-quality models with hyperparameter optimization. Process images with convolutional neural networks. Handle natural language datasets with recurrent neural networks. Use reinforcement learning to solve games such as tic-tac-toe. Train deep networks with hardware including GPUs and tensor processing units.

**Intelligent Mobile Projects with TensorFlow**

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 cloud environment. Hands-on recipes to work with TensorFlow on desktop, mobile, and cloud environment. Who This Book Is For: This book is intended for data analysts, data scientists, machine learning practitioners and deep learning enthusiasts who want to 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-10, and Youtube8m with TensorFlow and learn how to access and use them in your code. Use TensorFlow 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. Understand 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 of 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 Networks (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.

Learning TensorFlow.js

TensorFlow is one of the most popular machine learning frameworks in Python. With this book, you will improve your knowledge of some of the latest TensorFlow features and will be able to perform supervised and unsupervised machine learning and also train neural networks.

Deep Learning with TensorFlow 2 and Keras

Learn how to solve real life problems using different methods like logic regression, random forests and SVM's with TensorFlow. Key Features Understand predictive analytics along with its challenges and best practices Embedded with assessments that will help you revise the concepts you have learned in this book Book Description Predictive analytics discovers hidden patterns from structured and unstructured data for automated decision making in business intelligence. Predictive decisions are becoming a huge trend worldwide, catering to wide industry sectors by predicting which decisions are more likely to give maximum results. TensorFlow, Google's brainchild, is immensely popular and extensively used for predictive analysis. This book is a quick learning guide on all the three types of machine learning, that is, supervised, unsupervised, and reinforcement learning with TensorFlow. This book will teach you predictive analytics for high-dimensional and sequence data. In particular, you will learn the linear regression model for regression analysis. You will also learn how to use regression for predicting continuous values. You will learn supervised learning algorithms for predictive analytics. You will explore unsupervised learning and clustering using K-means You will then learn how to predict neighborhoods using K-means, and then, see another example of clustering audio clips based on their audio features. This book is ideal for developers, data analysts, machine learning practitioners, and deep learning enthusiasts who want to build powerful, robust, and accurate predictive models with the power of TensorFlow. This book is embedded with useful assessments that will help you revise the concepts you have learned in this book. What you will learn Learn TensorFlow features in a real-life problem, followed by detailed TensorFlow installation and configuration Explore computation graphs, data, and programming models also get an insight into an example of implementing linear regression model for predictive analytics Solve the Titanic survival problem using logistic regression, random forests, and SVMs for predictive analytics Dig deeper into predictive analytics and find out how to take advantage of it to cluster records belonging to the certain group or class for a dataset of unsupervised observations Learn several examples of how to apply reinforcement learning algorithms for developing predictive models on real-life datasets Who this book is for This book is aimed at developers, data analysts, machine learning practitioners, and deep learning enthusiasts who want to build powerful, robust, and accurate predictive models with the power of TensorFlow.

Learning TensorFlow

TensorFlow is the most popular Deep Learning Library out there. It has fantastic graph computations feature which helps data scientist to visualize his designed neural network using TensorBoard. This Machine learning library supports both Convolution as well as Recurrent Neural network. It supports parallel processing on CPU as well as GPU. Prominent machine learning algorithms supported by TensorFlow are Deep Learning Classification, wipe & deep, Boston Tree amongst others. The book is very hands-on and gives you industry ready deep learnings practices. Here is what is covered in the book – Table Of Content Chapter 1: What is Deep learning? Chapter 2: Machine Learning vs Deep Learning Chapter 3: What is TensorFlow? Chapter 4: Comparison of Deep Learning Libraries Chapter 5: How to Download and Install TensorFlow Windows and Mac Chapter 6: Jupyter Notebook Tutorial Chapter 7: TensorFlow on AWS Chapter 8: TensorFlow Basics: Tensor, Shape, Type, Graph, Sessions & Operators Chapter 9: Tensorboard: Graph Visualization with Example Chapter 10: NumPy Chapter 11: Pandas Chapter 12: Scikit-Learn Chapter 13: Linear Regression Chapter 14: Linear Regression Case Study
TensorFlow 2 Pocket Reference

Given the demand for AI and the ubiquity of JavaScript, TensorFlow.js was inevitable. With this Google framework, seasoned AI veterans and web developers alike can help propel the future of AI-driven websites. In this guide, author Gant Laborde--Google Developer Expert in machine learning and the web--provides a hands-on end-to-end approach to TensorFlow.js fundamentals for a broad technical audience that includes data scientists, engineers, web developers, students, and researchers. You’ll begin by working through some basic examples in TensorFlow.js before diving deeper into neural network architectures, DataFrames, TensorFlow Hub, model conversion, transfer learning, and more. Once you finish this book, you’ll know how to build and deploy production-ready deep learning systems with TensorFlow.js. Explore tensors, the most fundamental structure of machine learning—convert data into tensors and back with a real-world example. Combine AI with the web using TensorFlow.js. Use resources to convert, train, and manage machine learning data. Build and train your own training models from scratch.

Machine Learning Using TensorFlow Cookbook

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.

TensorFlow 2.0 Quick Start Guide

Given the demand for AI and the ubiquity of JavaScript, TensorFlow.js was inevitable. With this Google framework, seasoned AI veterans and web developers alike can help propel the future of AI-driven websites. In this guide, author Gant Laborde--Google Developer Expert in machine learning and the web--provides a hands-on end-to-end approach to TensorFlow.js fundamentals for a broad technical audience that includes data scientists, engineers, web developers, students, and researchers. You’ll begin by working through some basic examples in TensorFlow.js before diving deeper into neural network architectures, DataFrames, TensorFlow Hub, model conversion, transfer learning, and more. Once you finish this book, you’ll know how to build and deploy production-ready deep learning systems with TensorFlow.js. Explore tensors, the most fundamental structure of machine learning—convert data into tensors and back with a real-world example. Combine AI with the web using TensorFlow.js. Use resources to convert, train, and manage machine learning data. Build and train your own training models from scratch.

TensorFlow Machine Learning Cookbook

Get well versed with state-of-the-art techniques to tailor training processes and boost the performance of computer vision models using machine learning and deep learning techniques. Key features: Develop, train, and use deep learning algorithms for computer vision tasks using TensorFlow 2.x. Discover practical recipes to overcome various challenges faced while building computer vision models. Enable machines to gain a human level understanding to recognize and analyze digital images and videos. This book focuses on independent recipes to help you perform various computer vision tasks using TensorFlow. The book begins by taking you through the basics of deep learning for computer vision, along with covering TensorFlow 2.x’s key features, such as the Keras and tf.data.Dataset APIs. You’ll then learn about the ins and outs of common computer vision tasks, such as image classification, transfer learning, image enhancing and styling, and object detection. The book also covers autoencoders in domains such as inverse image search indexes and image denoising, while offering insights into various architectures used in the recipes, such as convolutional neural networks (CNNs), region-based CNNs (R-CNNs), VGGNet, and You Only Look Once (YOLO). Moving on, you’ll discover tips and tricks to solve any problems faced while building various computer vision applications. Finally, you’ll delve into more advanced topics such as generative adversarial networks (GANs), video processing, and AutoML, concluding with a section focused on techniques to help you boost the performance of your networks. By the end of this TensorFlow book, you’ll be able to confidently tackle a wide range of computer vision problems using TensorFlow 2.x. What you will learn: Understand how to...
Access Free Tensorflow

detect objects using state-of-the-art models such as YOLOv3 Use AutoML to predict gender and age from images Segment images using different approaches such as FCNs and generative models Learn how to improve your network's performance using rank-N accuracy, label smoothing, and test time augmentation Enable machines to recognize people's emotions in videos and real-time streams Access and reuse advanced TensorFlow Hub models to perform image classification and object detection Generate captions for images using CNNs and RNNs Who this book is for This book is for computer vision developers and engineers, as well as deep learning practitioners looking for go-to solutions to various problems that commonly arise in computer vision. You will discover how to employ modern machine learning (ML) techniques and deep learning architectures to perform a plethora of computer vision tasks. Basic knowledge of Python programming and computer vision is required.

Learn TensorFlow 2.0

Updated with new code, new projects, and new chapters, Machine Learning with TensorFlow, Second Edition gives readers a solid foundation in machine-learning concepts and the TensorFlow library. Written by NASA JPL Deputy CTO and Principal Data Scientist Chris Mattmann, all examples are accompanied by downloadable Jupyter Notebooks for a hands-on experience coding TensorFlow with Python. New and revised content expands coverage of core machine learning algorithms, and advancements in neural networks such as VGG-Face facial identification classifiers and deep speech classifiers. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Supercharge your data analysis with machine learning! ML algorithms automatically improve as they process data, so results get better over time. You don’t have to be a mathematician to use ML: Tools like Google’s TensorFlow library help with complex calculations so you can focus on getting the answers you need. About the book Machine Learning with TensorFlow, Second Edition is a fully revised guide to building machine learning models using Python and TensorFlow. You’ll apply core ML concepts to real-world challenges, such as sentiment analysis, text classification, and image recognition. Hands-on examples illustrate neural network techniques for deep speech processing, facial identification, and auto-encoding with CIFAR-10. What’s inside Inside Machine Learning with TensorFlow Choosing the best ML approaches Visualizing algorithms with TensorBoard Sharing results with collaborators Running models in Docker About the author Chris Mattmann is the Division Manager of the Artificial Intelligence, Analytics, and Innovation Organization at NASA Jet Propulsion Lab. The first edition of this book was written by Nishant Shukla with Kenneth Fricklas.

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Learn TensorFlow in 24 Hours

Become a machine learning pro! Google TensorFlow has become the darling of financial firms and research organizations, but the technology can be intimidating and the learning curve is steep. Luckily, TensorFlow For Dummies is here to offer you a friendly, easy-to-follow book on the subject. Inside, you’ll find out how to write applications with TensorFlow, while also grasping the concepts underlying machine learning—all without ever losing your cool! Machine learning has become ubiquitous in modern society, and its applications include language translation, robotics, handwriting analysis, financial prediction, and image recognition. TensorFlow is Google’s preeminent toolset for machine learning, and this hands-on guide makes it easy to understand, even for those without a background in artificial intelligence. Install TensorFlow on your computer Learn the fundamentals of statistical regression and neural networks Visualize the machine learning process with TensorBoard Perform image recognition with convolutional neural networks (CNNs) Analyze sequential data with recurrent neural networks (RNNs) Execute TensorFlow on mobile devices and the Google Cloud Platform (GCP) If you’re a manager or software developer looking to use TensorFlow for machine
learning, this is the book you’ll want to have close by.

**Hands-On Computer Vision with TensorFlow 2**

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

**Mastering Computer Vision with TensorFlow 2.x**

Apply neural network architectures to build state-of-the-art computer vision applications using the Python programming language Key Features Gain a fundamental understanding of advanced computer vision and neural network models in use today Cover tasks such as low-level vision, image classification, and object detection Develop deep learning models on cloud platforms and optimize them using TensorFlow Lite and the OpenVINO toolkit Book Description Computer vision allows machines to gain human-level understanding to visualize, process, and analyze images and videos. This book focuses on using TensorFlow to help you learn advanced computer vision tasks such as image acquisition, processing, and analysis. You’ll start with the key principles of computer vision and deep learning to build a solid foundation, before covering neural network architectures and understanding how they work rather than using them as a black box. Next, you’ll explore architectures such as VGG, ResNet, Inception, R-CNN, SSD, YOLO, and MobileNet. As you advance, you’ll learn to use visual search methods using transfer learning. You’ll also cover advanced computer vision concepts such as semantic segmentation, image inpainting with GAN’s, object tracking, video segmentation, and action recognition. Later, the book focuses on how machine learning and deep learning concepts can be used to perform tasks such as edge detection and face recognition. You’ll then discover how to develop powerful neural network models on your PC and on various cloud platforms. Finally, you’ll learn to perform model optimization methods to deploy models on edge devices for real-time inference. By the end of this book, you’ll have a solid understanding of computer vision and be able to confidently develop models to automate tasks. What you will learn Explore methods of feature extraction and image retrieval and visualize different layers of the neural network model Use TensorFlow for various visual search methods for real-world scenarios Build neural networks or adjust parameters to optimize the performance of models Understand TensorFlow DeepLab to perform semantic segmentation on images and DCGAN for image inpainting Evaluate your model and optimize and integrate it into your application to operate at scale Get up to speed with techniques for performing manual and automated image annotation Who this book is for This book is for computer vision professionals, image processing professionals, machine learning engineers and AI developers who have some knowledge of machine learning and deep learning and want to build expert-level computer vision applications. In addition to familiarity with TensorFlow, Python knowledge will be required to get started with this book.

**Pro Deep Learning with TensorFlow**

Learn how to apply TensorFlow to a wide range of deep learning and Machine Learning problems with this practical guide on training CNNs for image classification, image recognition, object detection and many computer vision challenges. Key Features Learn the fundamentals of Convolutional Neural Networks Harness Python and TensorFlow to train CNNs Build scalable deep learning models that can process millions of items Book Description Convolutional Neural Networks (CNN) are one of the most popular architectures used in computer vision apps. This book is an introduction to CNNs through solving real-world problems in deep learning while teaching you their implementation in popular Python library - TensorFlow. By the end of the book, you will be training CNNs in no time! We start with an overview of popular machine learning and deep learning models, and then get you set up with a TensorFlow development environment. This environment is the basis for implementing and training deep learning models
in later chapters. Then, you will use Convolutional Neural Networks to work on problems such as image classification, object detection, and semantic segmentation. After that, you will use transfer learning to see how these models can solve other deep learning problems. You will also get a taste of implementing generative models such as autoencoders and generative adversarial networks. Later on, you will see useful tips on machine learning best practices and troubleshooting. Finally, you will learn how to apply your models on large datasets of millions of images. What you will learn Train machine learning models with TensorFlow Create systems that can evolve and scale during their life cycle Use CNNs in image recognition and classification Use TensorFlow for building deep learning models Train popular deep learning models Fine-tune a neural network to improve the quality of results with transfer learning Build TensorFlow models that can scale to large datasets and systems Who this book is for This book is for Software Engineers, Data Scientists, or Machine Learning practitioners who want to use CNNs for solving real-world problems. Knowledge of basic machine learning concepts, linear algebra and Python will help.

**Hands-On Machine Learning with TensorFlow.js**

Implement TensorFlow’s offerings such as TensorBoard, TensorFlow.js, TensorFlow Probability, and TensorFlow Lite to build smart automation projects Key Features Use machine learning and deep learning principles to build real-world projects Get to grips with TensorFlow’s impressive range of module offerings Implement projects on GANs, reinforcement learning, and capsule network Book Description TensorFlow has transformed the way machine learning is perceived. TensorFlow Machine Learning Projects teaches you how to exploit the benefits—simplicity, efficiency, and flexibility—of using TensorFlow in various real-world projects. With the help of this book, you’ll not only learn how to build advanced projects using different datasets but also be able to tackle common challenges using a range of libraries from the TensorFlow ecosystem. To start with, you’ll get to grips with using TensorFlow for machine learning projects; you’ll explore a wide range of projects using TensorForest and TensorBoard for detecting exoplanets, TensorFlow.js for sentiment analysis, and TensorFlow Lite for digit classification. As you make your way through the book, you’ll build projects in various real-world domains, incorporating natural language processing (NLP), the Gaussian process, autoencoders, recommender systems, and Bayesian neural networks, along with trending areas such as Generative Adversarial Networks (GANs), capsule networks, and reinforcement learning. You’ll learn how to use the TensorFlow on Spark API and GPU-accelerated computing with TensorFlow to detect objects, followed by how to train and develop a recurrent neural network (RNN) model to generate book scripts. By the end of this book, you’ll have gained the required expertise to build full-fledged machine learning projects at work. What you will learn Understand the TensorFlow ecosystem using various datasets and techniques Create recommendation systems for quality product recommendations Build projects using CNNs, NLP, and Bayesian neural networks Play Pac-Man using deep reinforcement learning Deploy scalable TensorFlow-based machine learning systems Generate your own book script using RNNs Who this book is for TensorFlow Machine Learning Projects is for you if you are a data analyst, data scientist, machine learning professional, or deep learning enthusiast with basic knowledge of TensorFlow. This book is also for you if you want to build end-to-end projects in the machine learning domain using supervised, unsupervised, and reinforcement learning techniques

**TensorFlow for Deep Learning**

Computer vision is achieving a new frontier of capabilities in fields like health, automobile or robotics. This book explores TensorFlow 2, Google’s open-source AI framework, and teaches how to leverage deep neural networks for visual tasks. It will help you acquire the insight and skills to be a part of the exciting advances in computer vision.

**TinyML**

Deploy deep learning solutions in production with ease using TensorFlow. You’ll also develop the mathematical understanding and intuition required to invent new deep learning architectures and solutions on your own. Pro Deep Learning with TensorFlow provides practical, hands-on expertise so you can learn deep learning from scratch and deploy meaningful deep learning solutions. This book will allow you to get up to speed quickly using TensorFlow and to optimize different deep learning architectures. All of the practical aspects of deep learning that are relevant in any industry are emphasized in this book. You will be able to use the prototypes demonstrated to build new deep learning applications. The code presented in the book is available in the form of iPython notebooks and scripts which allow you to try out examples and extend them in interesting ways. You will be equipped with
the mathematical foundation and scientific knowledge to pursue research in this field and give back to the community. What You'll Learn Understand full stack deep learning using TensorFlow and gain a solid mathematical foundation for deep learning Deploy complex deep learning solutions in production using TensorFlow Carry out research on deep learning and perform experiments using TensorFlow

Who This Book Is For Data scientists and machine learning professionals, software developers, graduate students, and open source enthusiasts

Learning TensorFlow.js

Get hands-on with the browser-based JavaScript library for training and deploying machine learning models effectively Key Features Build, train and run machine learning models in the browser using TensorFlow.js Create smart web applications from scratch with the help of useful examples Use flexible and intuitive APIs from TensorFlow.js to understand how machine learning algorithms function Book Description TensorFlow.js is a framework that enables you to create performant machine learning (ML) applications that run smoothly in a web browser. With this book, you will learn how to use TensorFlow.js to implement various ML models through an example-based approach. Starting with the basics, you'll understand how ML models can be built on the web. Moving on, you will get to grips with the TensorFlow.js ecosystem to develop applications more efficiently. The book will then guide you through implementing ML techniques and algorithms such as regression, clustering, fast Fourier transform (FFT), and dimensionality reduction. You will later cover the Bellman equation to solve Markov decision process (MDP) problems and understand how it is related to reinforcement learning. Finally, you will explore techniques for deploying ML-based web applications and training models with TensorFlow Core. Throughout this ML book, you'll discover useful tips and tricks that will build on your knowledge. By the end of this book, you will be equipped with the skills you need to create your own web-based ML applications and fine-tune models to achieve high performance. What you will learn Use the t-SNE algorithm in TensorFlow.js to reduce dimensions in an input dataset Deploy tfjs-converter to convert Keras models and load them into TensorFlow.js Apply the Bellman equation to solve MDP problems Use the k-means algorithm in TensorFlow.js to visualize prediction results Create tf.js packages with Parcel, Webpack, and Rollup to deploy web apps Implement tf.js backend frameworks to tune and accelerate app performance Who this book is for This book is for web developers who want to learn how to integrate machine learning techniques with web-based applications from scratch. This book will also appeal to data scientists, machine learning practitioners, and deep learning enthusiasts who are looking to perform accelerated, browser-based machine learning on Web using TensorFlow.js. Working knowledge of JavaScript programming language is all you need to get started.

Deep Learning with TensorFlow 2 and Keras - Second Edition

Learn how to use TensorFlow 2.0 to build machine learning and deep learning models with complete examples. The book begins with introducing TensorFlow 2.0 framework and the major changes from its last release. Next, it focuses on building Supervised Machine Learning models using TensorFlow 2.0. It also demonstrates how to build models using customer estimators. Further, it explains how to use TensorFlow 2.0 API to build machine learning and deep learning models for image classification using the standard as well as custom parameters. You’ll review sequence predictions, saving, serving, deploying, and standardized datasets, and then deploy these models to production. All the code presented in the book will be available in the form of executable scripts at Github which allows you to try out the examples and extend them in interesting ways. What You’ll Learn Review the new features of TensorFlow 2.0 Use TensorFlow 2.0 to build machine learning and deep learning models Perform sequence predictions using TensorFlow 2.0 Deploy TensorFlow 2.0 models with practical examples Who This Book Is For Data scientists, machine and deep learning engineers.

Deep Learning with TensorFlow

Build machine and deep learning systems with the newly released TensorFlow 2 and Keras for the lab, production, and mobile devices Key Features Introduces and then uses TensorFlow 2 and Keras right from the start Teaches key machine and deep learning techniques Understand the fundamentals of deep learning and machine learning through clear explanations and extensive code samples Book Description Deep Learning with TensorFlow 2 and Keras, Second Edition teaches neural networks and deep learning techniques alongside TensorFlow (TF) and Keras. You’ll learn how to write deep learning applications in the most powerful, popular, and scalable machine learning stack available. TensorFlow is the machine learning library of choice for professional applications, while Keras offers a simple and powerful Python API for accessing TensorFlow. TensorFlow 2 provides full Keras integration, making advanced machine
learning easier and more convenient than ever before. This book also introduces neural
networks with TensorFlow, runs through the main applications (regression, ConvNets (CNNs),
GANs, RNNs, NLP), covers two working example apps, and then dives into TF in production, TF
mobile, and using TensorFlow with AutoML. What you will learn Build machine learning and deep
learning systems with TensorFlow 2 and the Keras API Use Regression analysis, the most
popular approach to machine learning Understand ConvNets (convolutional neural networks) and
how they are essential for deep learning systems such as image classifiers Use GANs
(generative adversarial networks) to create new data that fits with existing patterns
Discover RNNs (recurrent neural networks) that can process sequences of input intelligently,
using one part of a sequence to correctly interpret another Apply deep learning to natural
human language and interpret natural language texts to produce an appropriate response Train
your models on the cloud and put TF to work in real environments Explore how Google tools can
automate simple ML workflows without the need for complex modeling Who this book is for This
book is for Python developers and data scientists who want to build machine learning and deep
learning systems with TensorFlow. Whether or not you have done machine learning before, this
book gives you the theory and practice required to use Keras, TensorFlow 2, and AutoML to
build machine learning systems.

Mastering TensorFlow 1.x

Write modern natural language processing applications using deep learning algorithms and
TensorFlow Key Features Focuses on more efficient natural language processing using
TensorFlow Covers NLP as a field in its own right to improve understanding for choosing
TensorFlow tools and other deep learning approaches Provides choices for how to process and
evaluate large unstructured text datasets Learn to apply the TensorFlow toolbox to specific
tasks in the most interesting field in artificial intelligence Book Description Natural
language processing (NLP) supplies the majority of data available to deep learning
applications, while TensorFlow is the most important deep learning framework currently
available. Natural Language Processing with TensorFlow brings TensorFlow and NLP together to
give you invaluable tools to work with the immense volume of unstructured data in today's
data streams, and apply these tools to specific NLP tasks. Thushan Ganegedara starts by
giving you a grounding in NLP and TensorFlow basics. You'll then learn how to use Word2vec,
including advanced extensions, to create word embeddings that turn sequences of words into
vectors accessible to deep learning algorithms. Chapters on classical deep learning
algorithms, like convolutional neural networks (CNN) and recurrent neural networks (RNN),
demonstrate important NLP tasks as sentence classification and language generation. You will
learn how to apply high-performance RNN models, like long short-term memory (LSTM) cells, to
NLP tasks. You will also explore neural machine translation and implement a neural machine
translator. After reading this book, you will gain an understanding of NLP and you’ll have
the skills to apply TensorFlow in deep learning NLP applications, and how to perform specific
NLP tasks. What you will learn Core concepts of NLP and various approaches to natural
language processing How to solve NLP tasks by applying TensorFlow functions to create neural
networks Strategies to process large amounts of data into word representations that can be
used by deep learning applications Techniques for performing sentence classification and
language generation using CNNs and RNNs About employing state-of-the art advanced RNNs, like
long short-term memory, to solve complex text generation tasks How to write automatic
translation programs and implement an actual neural machine translator from scratch The
trends and innovations that are paving the future in NLP Who this book is for This book is for
Python developers with a strong interest in deep learning, who want to learn how to
leverage TensorFlow to simplify NLP tasks. Fundamental Python skills are assumed, as well as
some knowledge of machine learning and undergraduate-level calculus and linear algebra. No
previous natural language processing experience required, although some background in NLP or
computational linguistics will be helpful.

Adopting TensorFlow for Real-World AI

Tackle common commercial machine learning problems with Google's TensorFlow 1.x library and
build deployable solutions. About This Book Enter the new era of second-generation machine
learning with Python with this practical and insightful guide Set up TensorFlow 1.x for
actual industrial use, including high-performance setup aspects such as multi-GPU support
Create pipelines for training and using applying classifiers using raw real-world data Who
This Book Is For This book is for data scientists and researchers who are looking to either
migrate from an existing machine learning library or jump into a machine learning platform
headfirst. The book is also for software developers who wish to learn deep learning by
example. Particular focus is placed on solving commercial deep learning problems from several
industries using TensorFlow's unique features. No commercial domain knowledge is required,
but familiarity with Python and matrix math is expected. What You Will Learn Explore how to use different machine learning models to ask different questions of your data. Learn how to build deep neural networks using TensorFlow 1.x. Cover key tasks such as clustering, sentiment analysis, and regression analysis using TensorFlow 1.x. Find out how to write clean and elegant Python code that will optimize the strength of your algorithms. Discover how to embed your machine learning model in a web application for increased accessibility. Learn how to use multiple GPUs for faster training using AWS. In Detail Google’s TensorFlow is a game changer in the world of machine learning. It has made machine learning faster, simpler, and more accessible than ever before. This book will teach you how to easily get started with machine learning using the power of Python and TensorFlow 1.x. Firstly, you’ll cover the basic installation procedure and explore the capabilities of TensorFlow 1.x. This is followed by training and running the first classifier, and coverage of the unique features of the library including data flow graphs, training, and the visualization of performance with TensorBoard—all within an example-rich context using problems from multiple industries. You’ll be able to further explore text and image analysis, and be introduced to CNN models and their setup in TensorFlow 1.x. Next, you’ll implement a complete real-life production system from training to serving a deep learning model. As you advance you’ll learn about Amazon Web Services (AWS) and create a deep neural network to solve a video action recognition problem. Lastly, you’ll convert the Caffe model to TensorFlow and be introduced to the high-level TensorFlow library, TensorFlow-Slim. By the end of this book, you will be geared up to take on any challenges of implementing TensorFlow 1.x in your machine learning environment. Style and approach This comprehensive guide will enable you to understand the latest advances in machine learning and will empower you to implement this knowledge in your machine learning environment.

TensorFlow For Dummies

Create Deep Learning and Reinforcement Learning apps for multiple platforms with TensorFlow Key Features Build TensorFlow-powered AI applications for mobile and embedded devices. Learn modern AI topics such as computer vision, NLP, and deep reinforcement learning. Get practical insights and exclusive working code not available in the TensorFlow documentation. Book Description As a developer, you always need to keep an eye out and be ready for what will be trending soon, while also focusing on what's trending currently. So, what's better than learning about the integration of the best of both worlds, the present and the future? Artificial Intelligence (AI) is widely regarded as the next big thing after mobile, and Google's TensorFlow is the leading open source machine learning framework, the hottest branch of AI. This book covers more than 10 complete iOS, Android, and Raspberry Pi apps powered by TensorFlow and built from scratch, running all kinds of cool TensorFlow models offline on-device: from computer vision, speech and language processing to generative adversarial networks and AlphaZero-like deep reinforcement learning. You’ll learn how to use or retrain existing TensorFlow models, build your own models, and develop intelligent mobile apps running those TensorFlow models. You’ll learn how to quickly build such apps with step-by-step tutorials and how to avoid many pitfalls in the process with lots of hard-earned troubleshooting tips. What you will learn Classify images with transfer learning. Detect objects and their locations. Transform pictures with amazing art styles. Understand simple speech commands. Describe images in natural language. Recognize drawing with Convolutional Neural Network. And Long Short-Term Memory. Predict stock price with Recurrent Neural Network. in TensorFlow and Keras. Generate and enhance images with generative adversarial networks. Build AlphaZero-like mobile game app in TensorFlow and Keras. Use TensorFlow Lite and Core ML on mobile. Develop TensorFlow apps on Raspberry Pi that can move, see, listen, speak, and learn. Who this book is for If you're an iOS/Android developer interested in building and retraining others' TensorFlow models and running them in your mobile apps, or if you're a TensorFlow developer and want to run your new and amazing TensorFlow models on mobile devices, this book is for you. You'll also benefit from this book if you're interested in TensorFlow Lite, Core ML, or TensorFlow on Raspberry Pi.

Artificial Intelligence with Python

This easy-to-use reference for TensorFlow 2 design patterns in Python will help you make informed decisions for various use cases. Author KC Tung addresses common topics and tasks in enterprise data science and machine learning practices rather than focusing on TensorFlow itself. When and why would you feed training data as using NumPy or a streaming dataset? How would you set up cross-validations in the training process? How do you leverage a pretrained model using transfer learning? How do you perform hyperparameter tuning? Pick up this pocket reference and reduce the time you spend searching through options for your TensorFlow use cases. Understand best practices in TensorFlow model patterns and ML workflows. Use code
snippets as templates in building TensorFlow models and workflows. Save development time by integrating prebuilt models in TensorFlow Hub. Make informed design choices about data ingestion, training paradigms, model saving, and inferencing. Address common scenarios such as model design style, data ingestion workflow, model training, and tuning.

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

This book is aimed at providing a practical guidance and approach for utilizing TensorFlow in the real-world based on Python (a programming language). You are not expected to be an expert in Python or know Python at all. The book is intended for newcomers in the field of Machine Learning (ML) and Artificial Intelligence (AI), especially for those, who do not have any statistical background, but they are really interested to learn the details and approach of building a Machine Learning application. This book is also intended for experienced data scientists, Machine Learning engineers, who are generally too focused on building Machine Learning model(s), investing 60-70% of their time in making the model work with a greater level of accuracy, in some cases, they forget the real application and the use case of the application. In most of these cases they end up what we call “overfitting” of the model. The book is expected to focus on developing a Machine Learning application, and in the process detailing multiple real-world practical challenges, steps of a ML application(s). Honestly speaking, the book is meant for “lazy” engineers, aspiring data scientists, Machine Learning engineers, experienced IT professionals in other fields, who like the authors, hate reading through lengthy books with several hundred pages of mathematical models and equations to even getting started with Machine Learning. Many of us are looking for a book with not more than 100-150 pages to gain an understanding on Machine Learning, and it could be an icing on the cake if the book can do away with minimal to no mathematical equations. There are many books, articles, books, guides and documents published on Artificial Intelligence, Machine Learning, and most of them focus on mathematical equations, building models, they tend to be very lengthy spanning several hundred pages. Of course, they are aimed at serving an exhaustive content for readers to get a deep understanding on the subjects. The aim of this book is not only to just discuss the Machine Learning models, but also focus on explaining the core of Machine Learning with simple examples on regression, classifications, etc. and then discuss a practical approach and steps to build a productionized Machine Learning models with a practical feature engineering. As you read through the book, hopefully the myths of AI and Machine Learning will be debunked, and you will get a very granular/basic to an implementation level understanding and approach of developing ML applications. At the time of writing and conceptualizing this book (in 2019) the authors ensured to keep the content precise, and limit the length of the book in the range of 100-150 pages for those “lazy” but smart engineers out there. After you read this book you can expect to understand the commonly used terminologies of Machine Learning, Artificial Intelligence, learn a little bit of Python enough to be able to write your own ML code, use TensorFlow to build productionized models.

**Learn TensorFlow Enterprise**

This book is a comprehensive introduction for those who are new to scalable and optimized TensorFlow for production. You will learn how to deliver enterprise-grade support for your existing and newly built AI applications. You will address the various needs of AI-enabled organizations to manage and scale machine learning workloads in production.

**The TensorFlow Workshop**

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,
access free tensorflow

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.

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