



PyTorch

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TensorFlow

Tensorflow

Thushan Ganegedara



Tensorflow:

Mastering TensorFlow 1.x Armando Fandango, 2018-01-22 Build scale and deploy deep neural network models using the star libraries in Python Key Features Delve into advanced machine learning and deep learning use cases using TensorFlow and Keras Build deploy and scale end to end deep neural network models in a production environment Learn to deploy TensorFlow on mobile and distributed TensorFlow on GPU Clusters and Kubernetes Book Description TensorFlow is the most popular numerical computation library built from the ground up for distributed cloud and mobile environments TensorFlow represents the data as tensors and the computation as graphs This book is a comprehensive guide that lets you explore the advanced features of TensorFlow 1 x Gain insight into TensorFlow Core Keras TF Estimators TFLearn TF Slim Pretty Tensor and Sonnet Leverage the power of TensorFlow and Keras to build deep learning models using concepts such as transfer learning generative adversarial networks and deep reinforcement learning Throughout the book you will obtain hands on experience with varied datasets such as MNIST CIFAR 10 PTB text8 and COCO Images You will learn the advanced features of TensorFlow1 x such as distributed TensorFlow with TF Clusters deploy production models with TensorFlow Serving and build and deploy TensorFlow models for mobile and embedded devices on Android and iOS platforms You will see how to call TensorFlow and Keras API within the R statistical software and learn the required techniques for debugging when the TensorFlow API based code does not work as expected The book helps you obtain in depth knowledge of TensorFlow making you the go to person for solving artificial intelligence problems By the end of this guide you will have mastered the offerings of TensorFlow and Keras and gained the skills you need to build smarter faster and efficient machine learning and deep learning systems What you will learn Master advanced concepts of deep learning such as transfer learning reinforcement learning generative models and more using TensorFlow and Keras Perform supervised classification and regression and unsupervised clustering learning to solve machine learning tasks Build end to end deep learning CNN RNN and Autoencoders models with TensorFlow Scale and deploy production models with distributed and high performance computing on GPU and clusters Build TensorFlow models to work with multilayer perceptrons using Keras TFLearn and R Learn the functionalities of smart apps by building and deploying TensorFlow models on iOS and Android devices Supercharge TensorFlow with distributed training and deployment on Kubernetes and TensorFlow Clusters Who this book is for This book is for data scientists machine learning engineers artificial intelligence engineers and for all TensorFlow users who wish to upgrade their TensorFlow knowledge and work on various machine learning and deep learning problems If you are looking for an easy to follow guide that underlines the intricacies and complex use cases of machine learning you will find this book extremely useful Some basic understanding of TensorFlow is required to get the most out of the book [Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow](#) Aurélien Géron, 2022-10-04 Through a recent series of 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 bestselling book uses concrete examples minimal theory and production ready Python frameworks Scikit Learn Keras and TensorFlow to help you gain an intuitive understanding of the concepts and tools for building intelligent systems With this updated third edition author Aur lien G ron explores a range of techniques starting with simple linear regression and progressing to deep neural networks Numerous code examples and exercises throughout the book help you apply what you ve learned Programming experience is all you need to get started Use Scikit learn to track an example ML project end to end Explore several models including support vector machines decision trees random forests and ensemble methods Exploit unsupervised learning techniques such as dimensionality reduction clustering and anomaly detection Dive into neural net architectures including convolutional nets recurrent nets generative adversarial networks autoencoders diffusion models and transformers Use TensorFlow and Keras to build and train neural nets for computer vision natural language processing generative models and deep reinforcement learning

Learn TensorFlow 2.0 Pramod Singh,Avinash Manure,2019-12-17

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

TensorFlow 2.0 Quick Start Guide Tony Holdroyd,2019-03-29

Perform supervised and unsupervised machine learning and learn advanced techniques such as training neural networks Key FeaturesTrain your own models for effective prediction using high level Keras API Perform supervised and unsupervised machine learning and learn advanced techniques such as training neural networksGet acquainted with some new practices introduced in TensorFlow 2 0 AlphaBook Description 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 After giving you an overview of what s new in TensorFlow 2 0 Alpha the book moves on to setting up your machine learning environment using the TensorFlow library You will perform popular supervised machine learning tasks using techniques such as linear regression logistic regression and clustering You will get familiar with unsupervised learning for

autoencoder applications The book will also show you how to train effective neural networks using straightforward examples in a variety of different domains By the end of the book you will have been exposed to a large variety of machine learning and neural network TensorFlow techniques What you will learn Use tf Keras for fast prototyping building and training deep learning neural network models Easily convert your TensorFlow 1.12 applications to TensorFlow 2.0 compatible files Use TensorFlow to tackle traditional supervised and unsupervised machine learning applications Understand image recognition techniques using TensorFlow Perform neural style transfer for image hybridization using a neural network Code a recurrent neural network in TensorFlow to perform text style generation Who this book is for Data scientists machine learning developers and deep learning enthusiasts looking to quickly get started with TensorFlow 2 will find this book useful Some Python programming experience with version 3.6 or later along with a familiarity with Jupyter notebooks will be an added advantage Exposure to machine learning and neural network techniques would also be helpful

Learning TensorFlow
Tom Hope, Yehezkel S. Resheff, Itay Lieder, 2017-08-09 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 TensorBoard 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

Deep Learning with TensorFlow
Giancarlo Zaccone, Md. Rezaul Karim, 2018-03-30 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

Natural Language Processing with TensorFlow Thushan Ganegedara,2018-05-31 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

TinyML Pete Warden, Daniel Situnayake, 2019-12-16 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

Learn TensorFlow in 24 Hours Alex Nordeen, 2020-10-31 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 wibe 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 Chapter 15 Linear Classifier in TensorFlow Chapter 16 Kernel Methods Chapter 17 TensorFlow ANN Artificial Neural Network Chapter 18 ConvNet Convolutional Neural Network TensorFlow Image Classification Chapter 19 Autoencoder with TensorFlow Chapter 20 RNN Recurrent Neural Network

TensorFlow **TensorFlow 2 Pocket Reference** KC Tung,2021-07-19 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* Aurélien Géron,2019-09-05 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 [Intelligent Mobile Projects with TensorFlow](#) Jeff Tang,2018-05-22 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

TensorFlow Reinforcement Learning Quick Start Guide Kaushik Balakrishnan,2019-03-30 Leverage the power of Tensorflow to Create powerful software agents that can self learn to perform real world tasks Key FeaturesExplore efficient Reinforcement Learning algorithms and code them using TensorFlow and PythonTrain Reinforcement Learning agents for problems ranging from computer games to autonomous driving Formulate and devise selective algorithms and techniques in your applications in no time Book Description Advances in reinforcement learning algorithms have made it possible to use them for optimal control in several different industrial applications With this book you will apply Reinforcement Learning to a range of problems from computer games to autonomous driving The book starts by introducing you to essential Reinforcement Learning concepts such as agents environments rewards and advantage functions You will also master the distinctions between on policy and off policy algorithms as well as model free and model based algorithms You will also learn about several Reinforcement Learning algorithms such as SARSA Deep Q Networks DQN Deep Deterministic Policy Gradients DDPG Asynchronous Advantage Actor Critic A3C Trust Region Policy Optimization TRPO and Proximal Policy Optimization PPO The book will also show you how to code these algorithms in TensorFlow and Python and apply them to solve computer games from OpenAI Gym Finally you will also learn how to train a car to drive autonomously in the Torcs racing car simulator By the end of the book you will be able to design build train and evaluate feed forward neural networks and convolutional neural networks You will also have mastered coding state of the art algorithms and also training agents for various control problems What you will learnUnderstand the theory and concepts behind modern Reinforcement Learning algorithmsCode state of the art Reinforcement Learning algorithms with discrete or continuous actionsDevelop Reinforcement Learning algorithms and apply them to training agents to play computer gamesExplore DQN DDQN and Dueling architectures to play

Atari's Breakout using TensorFlow Use A3C to play CartPole and LunarLander Train an agent to drive a car autonomously in a simulator Who this book is for Data scientists and AI developers who wish to quickly get started with training effective reinforcement learning models in TensorFlow will find this book very useful Prior knowledge of machine learning and deep learning concepts as well as exposure to Python programming will be useful

Hands-On Computer Vision with TensorFlow 2 Benjamin Planche, Eliot Andres, 2019-05-30 A practical guide to building high performance systems for object detection segmentation video processing smartphone applications and more Key Features Discover how to build train and serve your own deep neural networks with TensorFlow 2 and Keras Apply modern solutions to a wide range of applications such as object detection and video analysis Learn how to run your models on mobile devices and web pages and improve their performance Book Description Computer vision solutions are becoming increasingly common making their way into fields such as health automobile social media and robotics This book will help you explore TensorFlow 2 the brand new version of Google's open source framework for machine learning You will understand how to benefit from using convolutional neural networks CNNs for visual tasks Hands On Computer Vision with TensorFlow 2 starts with the fundamentals of computer vision and deep learning teaching you how to build a neural network from scratch You will discover the features that have made TensorFlow the most widely used AI library along with its intuitive Keras interface You'll then move on to building training and deploying CNNs efficiently Complete with concrete code examples the book demonstrates how to classify images with modern solutions such as Inception and ResNet and extract specific content using You Only Look Once YOLO Mask R-CNN and U-Net You will also build generative adversarial networks GANs and variational autoencoders VAEs to create and edit images and long short term memory networks LSTMs to analyze videos In the process you will acquire advanced insights into transfer learning data augmentation domain adaptation and mobile and web deployment among other key concepts By the end of the book you will have both the theoretical understanding and practical skills to solve advanced computer vision problems with TensorFlow 2 0 What you will learn Create your own neural networks from scratch Classify images with modern architectures including Inception and ResNet Detect and segment objects in images with YOLO Mask R-CNN and U-Net Tackle problems faced when developing self-driving cars and facial emotion recognition systems Boost your application's performance with transfer learning GANs and domain adaptation Use recurrent neural networks RNNs for video analysis Optimize and deploy your networks on mobile devices and in the browser Who this book is for If you're new to deep learning and have some background in Python programming and image processing like reading writing image files and editing pixels this book is for you Even if you're an expert curious about the new TensorFlow 2 features you'll find this book useful While some theoretical concepts require knowledge of algebra and calculus the book covers concrete examples focused on practical applications such as visual recognition for self-driving cars and smartphone apps

TensorFlow For Dummies Matthew Scarpino, 2018-03-07 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

Optimizing Machine Learning Pipelines: Advanced Techniques with TensorFlow and Kubeflow Adam Jones,2025-01-09 Optimizing Machine Learning Pipelines Advanced Techniques with TensorFlow and Kubeflow is the definitive guide for data scientists AI practitioners and technology enthusiasts committed to optimizing their machine learning workflows This meticulously crafted book offers an in depth exploration of advanced machine learning operations MLOps with a strong focus on the practical deployment monitoring and management of machine learning models using TensorFlow and Kubeflow The journey begins with an overview of machine learning fundamentals and the inner workings of TensorFlow As readers progress they delve deeper into data preprocessing feature engineering and model building gradually mastering the complexities of fine tuning and optimizing models for production readiness The pivotal aspect of automating machine learning pipelines with Kubeflow is thoroughly examined empowering readers to deploy TensorFlow models with utmost confidence Furthermore the book provides valuable insights into advanced TensorFlow techniques ethical AI development and model management with TensorFlow Serving ensuring comprehensive coverage of key topics

Optimizing Machine Learning Pipelines Advanced Techniques with TensorFlow and Kubeflow is crafted to elevate its readers into proficient MLOps practitioners adept at harnessing the power of TensorFlow and Kubeflow to deliver impactful AI solutions Whether you are embarking on your first machine learning project or seeking to enhance your existing AI capabilities this book is your essential resource for mastering advanced machine learning operations

Machine Learning Projects for Mobile Applications Karthikeyan NG,2018-10-31 Bring magic to your mobile apps using TensorFlow Lite and Core ML Key FeaturesExplore machine learning using classification analytics and detection tasks Work with image text and video datasets to delve into real world tasksBuild apps for Android and iOS using Caffe Core ML and Tensorflow LiteBook Description Machine learning is a technique that focuses on developing computer programs that can be modified when exposed to new data We can make use of it for our mobile applications and this book will show you how to do so The book starts with the

basics of machine learning concepts for mobile applications and how to get well equipped for further tasks You will start by developing an app to classify age and gender using Core ML and Tensorflow Lite You will explore neural style transfer and get familiar with how deep CNNs work We will also take a closer look at Google s ML Kit for the Firebase SDK for mobile applications You will learn how to detect handwritten text on mobile You will also learn how to create your own Snapchat filter by making use of facial attributes and OpenCV You will learn how to train your own food classification model on your mobile all of this will be done with the help of deep learning techniques Lastly you will build an image classifier on your mobile compare its performance and analyze the results on both mobile and cloud using TensorFlow Lite with an RCNN By the end of this book you will not only have mastered the concepts of machine learning but also learned how to resolve problems faced while building powerful apps on mobiles using TensorFlow Lite Caffe2 and Core ML What you will learn

Demystify the machine learning landscape on mobile
Age and gender detection using TensorFlow Lite and Core ML
Use ML Kit for Firebase for in text detection face detection and barcode scanning
Create a digit classifier using adversarial learning
Build a cross platform application with face filters using OpenCV
Classify food using deep CNNs and TensorFlow Lite on iOS

Who this book is for Machine Learning Projects for Mobile Applications is for you if you are a data scientist machine learning expert deep learning or AI enthusiast who fancies mastering machine learning and deep learning implementation with practical examples using TensorFlow Lite and CoreML Basic knowledge of Python programming language would be an added advantage

What's New in TensorFlow 2.0 Ajay Baranwal, Alizishaan Khatri, Tanish Baranwal, 2019-08-12

Get to grips with key structural changes in TensorFlow 2.0
Key Features
Explore TF Keras APIs and strategies to run GPUs TPUs and compatible APIs across the TensorFlow ecosystem
Learn and implement best practices for building data ingestion pipelines using TF 2.0 APIs
Migrate your existing code from TensorFlow 1.x to TensorFlow 2.0 seamlessly

Book Description
TensorFlow is an end to end machine learning platform for experts as well as beginners and its new version TensorFlow 2.0 TF 2.0 improves its simplicity and ease of use This book will help you understand and utilize the latest TensorFlow features

What's New in TensorFlow 2.0 starts by focusing on advanced concepts such as the new TensorFlow Keras APIs eager execution and efficient distribution strategies that help you to run your machine learning models on multiple GPUs and TPUs The book then takes you through the process of building data ingestion and training pipelines and it provides recommendations and best practices for feeding data to models created using the new tf.keras API You ll explore the process of building an inference pipeline using TF Serving and other multi platform deployments before moving on to explore the newly released AIY which is essentially do it yourself AI This book delves into the core APIs to help you build unified convolutional and recurrent layers and use TensorBoard to visualize deep learning models using what if analysis By the end of the book you ll have learned about compatibility between TF 2.0 and TF 1.x and be able to migrate to TF 2.0 smoothly

What you will learn
Implement tf.keras APIs in TF 2.0 to build train and deploy production grade models
Build models with

Keras integration and eager execution
Explore distribution strategies to run models on GPUs and TPUs
Perform what if analysis with TensorBoard across a variety of models
Discover Vision Kit Voice Kit and the Edge TPU for model deployments
Build complex input data pipelines for ingesting large training datasets
Who this book is for If you're a data scientist machine learning practitioner deep learning researcher or AI enthusiast who wants to migrate code to TensorFlow 2.0 and explore the latest features of TensorFlow 2.0 this book is for you
Prior experience with TensorFlow and Python programming is necessary to understand the concepts covered in the book

Pro Deep Learning with TensorFlow
Santanu Pattanayak, 2017-12-06
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

Deep Learning with TensorFlow and Keras
Amita Kapoor, Antonio Gulli, Sujit Pal, Francois Chollet, 2022-10-06
Build cutting edge machine and deep learning systems for the lab production and mobile devices
Key Features
Understand the fundamentals of deep learning and machine learning through clear explanations and extensive code samples
Implement graph neural networks transformers using Hugging Face and TensorFlow Hub and joint and contrastive learning
Learn cutting edge machine and deep learning techniques
Book Description
Deep Learning with TensorFlow and Keras teaches you neural networks and deep learning techniques using 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 2.x focuses on simplicity and ease of use with updates like eager execution intuitive higher level APIs based on Keras and flexible model building on any platform
This book uses the latest TF 2.0 features and libraries to present an overview of supervised and unsupervised machine learning models and provides a comprehensive analysis of deep learning and reinforcement learning models using practical examples for the cloud mobile and large production environments
This book also shows you how to create neural networks with TensorFlow runs through popular algorithms regression convolutional neural networks

CNNs transformers generative adversarial networks GANs recurrent neural networks RNNs natural language processing NLP and graph neural networks GNNs covers working example apps and then dives into TF in production TF mobile and TensorFlow with AutoML What you will learn Learn how to use the popular GNNs with TensorFlow to carry out graph mining tasks Discover the world of transformers from pretraining to fine tuning to evaluating them Apply self supervised learning to natural language processing computer vision and audio signal processing Combine probabilistic and deep learning models using TensorFlow Probability Train your models on the cloud and put TF to work in real environments Build machine learning and deep learning systems with TensorFlow 2 x and the Keras API Who this book is for This hands on machine learning book is for Python developers and data scientists who want to build machine learning and deep learning systems with TensorFlow This book gives you the theory and practice required to use Keras TensorFlow and AutoML to build machine learning systems Some machine learning knowledge would be useful We don t assume TF knowledge

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Table of Contents Tensorflow

1. Understanding the eBook Tensorflow
 - The Rise of Digital Reading Tensorflow
 - Advantages of eBooks Over Traditional Books
2. Identifying Tensorflow
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Tensorflow
 - User-Friendly Interface
4. Exploring eBook Recommendations from Tensorflow
 - Personalized Recommendations
 - Tensorflow User Reviews and Ratings
 - Tensorflow and Bestseller Lists

5. Accessing Tensorflow Free and Paid eBooks
 - Tensorflow Public Domain eBooks
 - Tensorflow eBook Subscription Services
 - Tensorflow Budget-Friendly Options
6. Navigating Tensorflow eBook Formats
 - ePub, PDF, MOBI, and More
 - Tensorflow Compatibility with Devices
 - Tensorflow Enhanced eBook Features
7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Tensorflow
 - Highlighting and Note-Taking Tensorflow
 - Interactive Elements Tensorflow
8. Staying Engaged with Tensorflow
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Tensorflow
9. Balancing eBooks and Physical Books Tensorflow
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Tensorflow
10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
11. Cultivating a Reading Routine Tensorflow
 - Setting Reading Goals Tensorflow
 - Carving Out Dedicated Reading Time
12. Sourcing Reliable Information of Tensorflow
 - Fact-Checking eBook Content of Tensorflow
 - Distinguishing Credible Sources
13. Promoting Lifelong Learning

- Utilizing eBooks for Skill Development
 - Exploring Educational eBooks
14. Embracing eBook Trends
- Integration of Multimedia Elements
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Tensorflow Introduction

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