Tensorflow Machine Learning Cookbook

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this practical guide provides more than 200 self contained recipes to help you solve machine learning challenges you may encounter in your work if you re comfortable with python and its libraries including pandas and scikit learn you ll be able to address specific problems from loading data to training models and leveraging neural networks each recipe in this updated edition includes code that you can copy paste and run with a toy dataset to ensure that it works from there you can adapt these recipes according to your use case or application recipes include a discussion that explains the solution and provides meaningful context go beyond theory and concepts by learning the nuts and bolts you need to construct working machine learning applications you ll find recipes for vectors matrices and arrays working with data from csv json sql databases cloud storage and other sources handling numerical and categorical data text images and dates and times dimensionality reduction using feature extraction or feature selection model evaluation and selection linear and logical regression trees and forests and k nearest neighbors supporting vector machines svm naäve bayes clustering and tree based models saving loading and

serving trained models from multiple frameworks

with early release ebooks you get books in their earliest form the author s raw and unedited content as he or she writes so you can take advantage of these technologies long before the official release of these titles you ll also receive updates when significant changes are made new chapters are available and the final ebook bundle is released the python programming language and its libraries including pandas and scikit learn provide a production grade environment to help you accomplish a broad range of machine learning tasks with this comprehensive cookbook data scientists and software engineers familiar with python will benefit from almost 200 practical recipes for building a comprehensive machine learning pipeline everything from data preprocessing and feature engineering to model evaluation and deep learning learn from author chris albon a data scientist who has written more than 500 tutorials on python data science and machine learning each recipe in this practical cookbook includes code solutions that you can put to work right away along with a discussion of how and why they work making it ideal as a learning tool and reference book

a cookbook that will help you implement machine learning algorithms and techniques by building real world projects Ê key featuresÊ learn how to handle an entire machine learning pipeline supported with adequate mathematics create predictive models and choose the right model for various types of datasets learn the art of tuning a model to improve accuracy as per business requirements get familiar with concepts related to data analytics with visualization data science and machine learning description machine learning does not have to be intimidating at all this book focuses on the concepts of machine learning and data analytics with mathematical explanations and programming examples all the codes are written in python as it is one of the most popular programming languages used for data science and machine learning here i have leveraged multiple libraries like numpy pandas scikit learn etc to ease our task and not reinvent the wheel there are five projects in total each addressing a unique problem with the recipes in this cookbook one will learn how to solve machine learning problems for real time data and perform data analysis and analytics classification and beyond the datasets used are also unique and will help one to think understand the problem and proceed towards the goal the book is not saturated with mathematics but mostly all the mathematical concepts are covered for the important topics every chapter typically starts with some theory and prerequisites and then it gradually dives into the implementation of the same concept using python keeping a project in the background Ê Ê what will you learn understand the working of the o s e m n framework in data science Ê get familiar with the end to end implementation of machine learning pipeline learn how to implement machine learning algorithms and concepts using python learn how to build a predictive model for a business case who this book is forÊ this cookbook is meant for anybody who is passionate enough to get into the world of machine learning and has a preliminary understanding of the basics of linear algebra calculus probability and statistics this book also serves as a reference guidebook for intermediate machine learning practitioners Ê table of contents 1 boston crime 2 world happiness report 3 iris species 4 credit card fraud detection 5 heart disease uci

discover powerful ways to effectively solve real world machine learning problems using key libraries including scikit learn tensorflow and pytorch key featureslearn and implement machine

learning algorithms in a variety of real life scenarioscover a range of tasks catering to supervised unsupervised and reinforcement learning techniquesfind easy to follow code solutions for tackling common and not so common challengesbook description this eagerly anticipated second edition of the popular python machine learning cookbook will enable you to adopt a fresh approach to dealing with real world machine learning and deep learning tasks with the help of over 100 recipes you will learn to build powerful machine learning applications using modern libraries from the python ecosystem the book will also guide you on how to implement various machine learning algorithms for classification clustering and recommendation engines using a recipe based approach with emphasis on practical solutions dedicated sections in the book will help you to apply supervised and unsupervised learning techniques to real world problems toward the concluding chapters you will get to grips with recipes that teach you advanced techniques including reinforcement learning deep neural networks and automated machine learning by the end of this book you will be equipped with the skills you need to apply machine learning techniques and leverage the full capabilities of the python ecosystem through real world examples what you will learnuse predictive modeling and apply it to real world problemsexplore data visualization techniques to interact with your datalearn how to build a recommendation engineunderstand how to interact with text data and build models to analyze itwork with speech data and recognize spoken words using hidden markov modelsget well versed with reinforcement learning automated ml and transfer learningwork with image data and build systems for image recognition and biometric face recognitionuse deep neural networks to build an optical character recognition systemwho this book is for this book is for data scientists machine learning developers deep learning enthusiasts and python programmers who want to solve real world challenges using machine learning techniques and algorithms if you are facing challenges at work and want ready to use code solutions to cover key tasks in machine learning and the deep learning domain then this book is what you need familiarity with python programming and machine learning concepts will be useful

work through practical recipes to learn how to solve complex machine learning and deep learning problems using python key featuresget up and running with artificial intelligence in no time using hands on problem solving recipesexplore popular python libraries and tools to build ai solutions for images text sounds and imagesimplement nlp reinforcement learning deep learning gans monte carlo tree search and much morebook description artificial intelligence ai plays an integral role in automating problem solving this involves predicting and classifying data and training agents to execute tasks successfully this book will teach you how to solve complex problems with the help of independent and insightful recipes ranging from the essentials to advanced methods that have just come out of research artificial intelligence with python cookbook starts by showing you how to set up your python environment and taking you through the fundamentals of data exploration moving ahead you ll be able to implement heuristic search techniques and genetic algorithms in addition to this you ll apply probabilistic models constraint optimization and reinforcement learning as you advance through the book you ll build deep learning models for text images video and audio and then delve into algorithmic bias style transfer music generation and ai use cases in the healthcare and insurance industries throughout the book you ll learn about a variety of tools for problem solving and gain the knowledge needed to effectively approach complex problems by the end of this book on ai you will have the skills you need to write ai and

machine learning algorithms test them and deploy them for production what you will learnimplement data preprocessing steps and optimize model hyperparametersdelve into representational learning with adversarial autoencodersuse active learning recommenders knowledge embedding and sat solversget to grips with probabilistic modeling with tensorflow probabilityrun object detection text to speech conversion and text and music generationapply swarm algorithms multi agent systems and graph networksgo from proof of concept to production by deploying models as microservicesunderstand how to use modern ai in practicewho this book is for this ai machine learning book is for python developers data scientists machine learning engineers and deep learning practitioners who want to learn how to build artificial intelligence solutions with easy to follow recipes you ll also find this book useful if you re looking for state of the art solutions to perform different machine learning tasks in various use cases basic working knowledge of the python programming language and machine learning concepts will help you to work with code effectively in this book

explore machine learning concepts using the latest numerical computing library tensorflow with the help of this comprehensive cookbook about this book your quick guide to implementing tensorflow in your day to day machine learning activities learn advanced techniques that bring more accuracy and speed to machine learning upgrade your knowledge to the second generation of machine learning with this guide on tensorflow who this book is for this book is ideal for data scientists who are familiar with c or python and perform machine learning activities on a day to day basis intermediate and advanced machine learning implementers who need a quick guide they can easily navigate will find it useful what you will learn become familiar with the basics of the tensorflow machine learning library get to know linear regression techniques with tensorflow learn svms with hands on recipes implement neural networks and improve predictions apply nlp and sentiment analysis to your data master cnn and rnn through practical recipes take tensorflow into production in detail tensorflow is an open source software library for machine intelligence the independent recipes in this book will teach you how to use tensorflow for complex data computations and will let you dig deeper and gain more insights into your data than ever before you ll work through recipes on training models model evaluation sentiment analysis regression analysis clustering analysis artificial neural networks and deep learning each using google s machine learning library tensorflow this guide starts with the fundamentals of the tensorflow library which includes variables matrices and various data sources moving ahead you will get hands on experience with linear regression techniques with tensorflow the next chapters cover important high level concepts such as neural networks cnn rnn and nlp once you are familiar and comfortable with the tensorflow ecosystem the last chapter will show you how to take it to production style and approach this book takes a recipe based approach where every topic is explicated with the help of a real world example

learn to use scikit learn operations and functions for machine learning and deep learning applications about this book handle a variety of machine learning tasks effortlessly by leveraging the power of scikit learn perform supervised and unsupervised learning with ease and evaluate the performance of your model practical easy to understand recipes aimed at helping you choose the right machine learning algorithm who this book is for data analysts already familiar with python but not so much with scikit learn who want quick solutions to the common machine

learning problems will find this book to be very useful if you are a python programmer who wants to take a dive into the world of machine learning in a practical manner this book will help you too what you will learn build predictive models in minutes by using scikit learn understand the differences and relationships between classification and regression two types of supervised learning use distance metrics to predict in clustering a type of unsupervised learning find points with similar characteristics with nearest neighbors use automation and cross validation to find a best model and focus on it for a data product choose among the best algorithm of many or use them together in an ensemble create your own estimator with the simple syntax of sklearn explore the feed forward neural networks available in scikit learn in detail python is quickly becoming the go to language for analysts and data scientists due to its simplicity and flexibility and within the python data space scikit learn is the unequivocal choice for machine learning this book includes walk throughs and solutions to the common as well as the not so common problems in machine learning and how scikit learn can be leveraged to perform various machine learning tasks effectively the second edition begins with taking you through recipes on evaluating the statistical properties of data and generates synthetic data for machine learning modelling as you progress through the chapters you will comes across recipes that will teach you to implement techniques like data pre processing linear regression logistic regression k nn naive bayes classification decision trees ensembles and much more furthermore you ll learn to optimize your models with multi class classification cross validation model evaluation and dive deeper in to implementing deep learning with scikit learn along with covering the enhanced features on model section api and new features like classifiers regressors and estimators the book also contains recipes on evaluating and fine tuning the performance of your model by the end of this book you will have explored plethora of features offered by scikit learn for python to solve any machine learning problem you come across style and approach this book consists of practical recipes on scikit learn that target novices as well as intermediate users it goes deep into the technical issues covers additional protocols and many more real live examples so that you are able to implement it in your daily life scenarios

comprehensive recipes to give you valuable insights on transformers reinforcement learning and more key featuresdeep learning solutions from kaggle masters and google developer expertsget to grips with the fundamentals including variables matrices and data sourceslearn advanced techniques to make your algorithms faster and more accuratebook description the independent recipes in machine learning using tensorflow cookbook will teach you how to perform complex data computations and gain valuable insights into your data dive into recipes on training models model evaluation sentiment analysis regression analysis artificial neural networks and deep learning each using google s machine learning library tensorflow this cookbook covers the fundamentals of the tensorflow library including variables matrices and various data sources you ll discover real world implementations of keras and tensorflow and learn how to use estimators to train linear models and boosted trees both for classification and regression explore the practical applications of a variety of deep learning architectures such as recurrent neural networks and transformers and see how they can be used to solve computer vision and natural language processing nlp problems with the help of this book you will be proficient in using tensorflow understand deep learning from the basics and be able to implement machine learning algorithms in real world scenarios what you will learntake tensorflow into productionimplement and fine

tune transformer models for various nlp tasksapply reinforcement learning algorithms using the tf agents frameworkunderstand linear regression techniques and use estimators to train linear modelsexecute neural networks and improve predictions on tabular datamaster convolutional neural networks and recurrent neural networks through practical recipeswho this book is for if you are a data scientist or a machine learning engineer and you want to skip detailed theoretical explanations in favor of building production ready machine learning models using tensorflow this book is for you basic familiarity with python linear algebra statistics and machine learning is necessary to make the most out of this book

100 recipes that teach you how to perform various machine learning tasks in the real world about this book understand which algorithms to use in a given context with the help of this exciting recipe based guide learn about perceptrons and see how they are used to build neural networks stuck while making sense of images text speech and real estate this guide will come to your rescue showing you how to perform machine learning for each one of these using various techniques who this book is for this book is for python programmers who are looking to use machine learning algorithms to create real world applications this book is friendly to python beginners but familiarity with python programming would certainly be useful to play around with the code what you will learn explore classification algorithms and apply them to the income bracket estimation problem use predictive modeling and apply it to real world problems understand how to perform market segmentation using unsupervised learning explore data visualization techniques to interact with your data in diverse ways find out how to build a recommendation engine understand how to interact with text data and build models to analyze it work with speech data and recognize spoken words using hidden markov models analyze stock market data using conditional random fields work with image data and build systems for image recognition and biometric face recognition grasp how to use deep neural networks to build an optical character recognition system in detail machine learning is becoming increasingly pervasive in the modern data driven world it is used extensively across many fields such as search engines robotics self driving cars and more with this book you will learn how to perform various machine learning tasks in different environments we ll start by exploring a range of real life scenarios where machine learning can be used and look at various building blocks throughout the book you ll use a wide variety of machine learning algorithms to solve real world problems and use python to implement these algorithms you ll discover how to deal with various types of data and explore the differences between machine learning paradigms such as supervised and unsupervised learning we also cover a range of regression techniques classification algorithms predictive modeling data visualization techniques recommendation engines and more with the help of real world examples style and approach you will explore various real life scenarios in this book where machine learning can be used and learn about different building blocks of machine learning using independent recipes in the book

implement reinforcement learning techniques and algorithms with the help of real world examples and recipes key featuresuse pytorch 1 x to design and build self learning artificial intelligence ai modelsimplement rl algorithms to solve control and optimization challenges faced by data scientists todayapply modern rl libraries to simulate a controlled environment for your projectsbook description reinforcement learning rl is a branch of machine learning that has gained

popularity in recent times it allows you to train ai models that learn from their own actions and optimize their behavior pytorch has also emerged as the preferred tool for training rl models because of its efficiency and ease of use with this book you ll explore the important rl concepts and the implementation of algorithms in pytorch 1 x the recipes in the book along with real world examples will help you master various rl techniques such as dynamic programming monte carlo simulations temporal difference and q learning you ll also gain insights into industry specific applications of these techniques later chapters will guide you through solving problems such as the multi armed bandit problem and the cartpole problem using the multi armed bandit algorithm and function approximation you ll also learn how to use deep q networks to complete atari games along with how to effectively implement policy gradients finally you ll discover how rl techniques are applied to blackjack gridworld environments internet advertising and the flappy bird game by the end of this book you ll have developed the skills you need to implement popular rl algorithms and use rl techniques to solve real world problems what you will learnuse q learning and the state action reward state action sarsa algorithm to solve various gridworld problemsdevelop a multi armed bandit algorithm to optimize display advertisingscale up learning and control processes using deep q networkssimulate markov decision processes openai gym environments and other common control problemsselect and build rl models evaluate their performance and optimize and deploy themuse policy gradient methods to solve continuous rl problemswho this book is for machine learning engineers data scientists and ai researchers looking for quick solutions to different reinforcement learning problems will find this book useful although prior knowledge of machine learning concepts is required experience with pytorch will be useful but not necessary

if you want to learn how to use r for machine learning and gain insights from your data then this book is ideal for you regardless of your level of experience this book covers the basics of applying r to machine learning through to advanced techniques while it is helpful if you are familiar with basic programming or machine learning concepts you do not require prior experience to benefit from this book

skip the theory and get the most out of tensorflow to build production ready machine learning models key features exploit the features of tensorflow to build and deploy machine learning models train neural networks to tackle real world problems in computer vision and nlp handy techniques to write production ready code for your tensorflow models book description 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 allow you to dig deeper and gain more insights into your data than ever before with the help of this book you will work with recipes for training models model evaluation sentiment analysis regression analysis clustering analysis artificial neural networks and more you will explore rnns cnns gans reinforcement learning and capsule networks each using google s machine learning library tensorflow through real world examples you will get hands on experience with linear regression techniques with tensorflow once you are familiar and comfortable with the tensorflow ecosystem you will be shown how to take it to production by the end of the book you will be proficient in the field of machine intelligence using tensorflow you will also have good insight into deep learning and be capable of implementing machine learning algorithms in real world scenarios what you will learn become familiar with the basic features of the tensorflow library get to know linear

regression techniques with tensorflow learn svms with hands on recipes implement neural networks to improve predictive modeling apply nlp and sentiment analysis to your data master cnn and rnn through practical recipes implement the gradient boosted random forest to predict housing prices take tensorflow into production who this book is for if you are a data scientist or a machine learning engineer with some knowledge of linear algebra statistics and machine learning this book is for you if you want to skip the theory and build production ready machine learning models using tensorflow without reading pages and pages of material this book is for you some background in python programming is assumed

implement machine learning algorithms to build ensemble models using keras h2o scikit learn pandas and more key featuresapply popular machine learning algorithms using a recipe based approachimplement boosting bagging and stacking ensemble methods to improve machine learning modelsdiscover real world ensemble applications and encounter complex challenges in kaggle competitionsbook description ensemble modeling is an approach used to improve the performance of machine learning models it combines two or more similar or dissimilar machine learning algorithms to deliver superior intellectual powers this book will help you to implement popular machine learning algorithms to cover different paradigms of ensemble machine learning such as boosting bagging and stacking the ensemble machine learning cookbook will start by getting you acquainted with the basics of ensemble techniques and exploratory data analysis you ll then learn to implement tasks related to statistical and machine learning algorithms to understand the ensemble of multiple heterogeneous algorithms it will also ensure that you don t miss out on key topics such as like resampling methods as you progress you ll get a better understanding of bagging boosting stacking and working with the random forest algorithm using real world examples the book will highlight how these ensemble methods use multiple models to improve machine learning results as compared to a single model in the concluding chapters you ll delve into advanced ensemble models using neural networks natural language processing and more you ll also be able to implement models such as fraud detection text categorization and sentiment analysis by the end of this book you ll be able to harness ensemble techniques and the working mechanisms of machine learning algorithms to build intelligent models using individual recipes what you will learnunderstand how to use machine learning algorithms for regression and classification problemsimplement ensemble techniques such as averaging weighted averaging and max votingget to grips with advanced ensemble methods such as bootstrapping bagging and stackinguse random forest for tasks such as classification and regressionimplement an ensemble of homogeneous and heterogeneous machine learning algorithmslearn and implement various boosting techniques such as adaboost gradient boosting machine and xgboostwho this book is for this book is designed for data scientists machine learning developers and deep learning enthusiasts who want to delve into machine learning algorithms to build powerful ensemble models working knowledge of python programming and basic statistics is a must to help you grasp the concepts in the book

leverage the power of deep learning and keras to develop smarter and more efficient data models key featuresunderstand different neural networks and their implementation using kerasexplore recipes for training and fine tuning your neural network modelsput your deep learning knowledge to practice with real world use cases tips and tricksbook description keras has quickly emerged as

a popular deep learning library written in python it allows you to train convolutional as well as recurrent neural networks with speed and accuracy the keras deep learning cookbook shows you how to tackle different problems encountered while training efficient deep learning models with the help of the popular keras library starting with installing and setting up keras the book demonstrates how you can perform deep learning with keras in the tensorflow from loading data to fitting and evaluating your model for optimal performance you will work through a step by step process to tackle every possible problem faced while training deep models you will implement convolutional and recurrent neural networks adversarial networks and more with the help of this handy guide in addition to this you will learn how to train these models for real world image and language processing tasks by the end of this book you will have a practical hands on understanding of how you can leverage the power of python and keras to perform effective deep learning what you will learninstall and configure keras in tensorflowmaster neural network programming using the keras library understand the different keras layers use keras to implement simple feed forward neural networks cnns and rnnswork with various datasets and models used for image and text classificationdevelop text summarization and reinforcement learning models using keraswho this book is for keras deep learning cookbook is for you if you are a data scientist or machine learning expert who wants to find practical solutions to common problems encountered while training deep learning models a basic understanding of python and some experience in machine learning and neural networks is required for this book

a step by step solution based guide to preparing building training and deploying high quality machine learning models with amazon sagemaker key featuresperform ml experiments with built in and custom algorithms in sagemakerexplore proven solutions when working with tensorflow pytorch hugging face transformers and scikit learnuse the different features and capabilities of sagemaker to automate relevant ml processesbook description amazon sagemaker is a fully managed machine learning ml service that helps data scientists and ml practitioners manage ml experiments in this book you ll use the different capabilities and features of amazon sagemaker to solve relevant data science and ml problems this step by step guide features 80 proven recipes designed to give you the hands on machine learning experience needed to contribute to real world experiments and projects you ll cover the algorithms and techniques that are commonly used when training and deploying nlp time series forecasting and computer vision models to solve ml problems you ll explore various solutions for working with deep learning libraries and frameworks such as tensorflow pytorch and hugging face transformers in amazon sagemaker you ll also learn how to use sagemaker clarify sagemaker model monitor sagemaker debugger and sagemaker experiments to debug manage and monitor multiple ml experiments and deployments moreover you ll have a better understanding of how sagemaker feature store autopilot and pipelines can meet the specific needs of data science teams by the end of this book you ll be able to combine the different solutions you ve learned as building blocks to solve real world ml problems what you will learntrain and deploy nlp time series forecasting and computer vision models to solve different business problemspush the limits of customization in sagemaker using custom container imagesuse automl capabilities with sagemaker autopilot to create high quality modelswork with effective data analysis and preparation techniquesexplore solutions for debugging and managing ml experiments and deploymentsdeal with bias detection and ml explainability requirements using sagemaker clarifyautomate intermediate and complex deployments and workflows using a

variety of solutionswho this book is for this book is for developers data scientists and machine learning practitioners interested in using amazon sagemaker to build analyze and deploy machine learning models with 80 step by step recipes all you need is an aws account to get things running prior knowledge of aws machine learning and the python programming language will help you to grasp the concepts covered in this book more effectively

solve different problems in modelling deep neural networks using python tensorflow and keras with this practical guide about this book practical recipes on training different neural network models and tuning them for optimal performance use python frameworks like tensorflow caffe keras theano for natural language processing computer vision and more a hands on guide covering the common as well as the not so common problems in deep learning using python who this book is for this book is intended for machine learning professionals who are looking to use deep learning algorithms to create real world applications using python thorough understanding of the machine learning concepts and python libraries such as numpy scipy and scikit learn is expected additionally basic knowledge in linear algebra and calculus is desired what you will learn implement different neural network models in python select the best python framework for deep learning such as pytorch tensorflow mxnet and keras apply tips and tricks related to neural networks internals to boost learning performances consolidate machine learning principles and apply them in the deep learning field reuse and adapt python code snippets to everyday problems evaluate the cost benefits and performance implication of each discussed solution in detail deep learning is revolutionizing a wide range of industries for many applications deep learning has proven to outperform humans by making faster and more accurate predictions this book provides a top down and bottom up approach to demonstrate deep learning solutions to real world problems in different areas these applications include computer vision natural language processing time series and robotics the python deep learning cookbook presents technical solutions to the issues presented along with a detailed explanation of the solutions furthermore a discussion on corresponding pros and cons of implementing the proposed solution using one of the popular frameworks like tensorflow pytorch keras and cntk is provided the book includes recipes that are related to the basic concepts of neural networks all techniques s as well as classical networks topologies the main purpose of this book is to provide python programmers a detailed list of recipes to apply deep learning to common and not so common scenarios style and approach unique blend of independent recipes arranged in the most logical manner

simplify machine learning model implementations with spark about this book solve the day to day problems of data science with spark this unique cookbook consists of exciting and intuitive numerical recipes optimize your work by acquiring cleaning analyzing predicting and visualizing your data who this book is for this book is for scala developers with a fairly good exposure to and understanding of machine learning techniques but lack practical implementations with spark a solid knowledge of machine learning algorithms is assumed as well as hands on experience of implementing ml algorithms with scala however you do not need to be acquainted with the spark ml libraries and ecosystem what you will learn get to know how scala and spark go hand in hand for developers when developing ml systems with spark build a recommendation engine that scales with spark find out how to build unsupervised clustering systems to classify data in spark build machine learning systems with the decision tree and ensemble models in spark deal with the curse

of high dimensionality in big data using spark implement text analytics for search engines in spark streaming machine learning system implementation using spark in detail machine learning aims to extract knowledge from data relying on fundamental concepts in computer science statistics probability and optimization learning about algorithms enables a wide range of applications from everyday tasks such as product recommendations and spam filtering to cutting edge applications such as self driving cars and personalized medicine you will gain hands on experience of applying these principles using apache spark a resilient cluster computing system well suited for large scale machine learning tasks this book begins with a quick overview of setting up the necessary ides to facilitate the execution of code examples that will be covered in various chapters it also highlights some key issues developers face while working with machine learning algorithms on the spark platform we progress by uncovering the various spark apis and the implementation of ml algorithms with developing classification systems recommendation engines text analytics clustering and learning systems toward the final chapters we ll focus on building high end applications and explain various unsupervised methodologies and challenges to tackle when implementing with big data ml systems style and approach this book is packed with intuitive recipes supported with line by line explanations to help you understand how to optimize your work flow and resolve problems when working with complex data modeling tasks and predictive algorithms this is a valuable resource for data scientists and those working on large scale data projects

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 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 tensorboard to understand neural network architectures optimize the learning process and peek inside the neural network black box use different regression techniques for prediction and classification problems build single and multilayer perceptrons in tensorflow implement cnn and rnn in tensorflow and use it to solve real world use cases learn how restricted boltzmann machines can be used to recommend movies understand the implementation of autoencoders and deep belief networks and use them for emotion detection master the different reinforcement learning methods to implement game playing agents gans and their implementation using tensorflow in detail deep neural networks dnns have achieved a lot of success in the field 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

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