Model Training In Machine Learning

Machine Learning Cookbook with Python
Up and Running Google AutoML and AI Platform: Building Machine Learning and NLP Models Using AutoML and AI Platform for Production Environment (English Edition)
Building Intelligent Cloud Applications
Lifelong Machine Learning
Programming With Python
Federated Learning Systems
Proceedings of the international conference on Machine Learning
Machine Learning With Tensorflow
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Artificial Intelligence with Python
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Lifelong Machine Learning, Second Edition

KARTER CAMILLE

<u>Machine Learning Cookbook with Python</u> Springer Nature
Programming With Python - 4 BOOK BUNDLE!! Deep Learning with Keras Here Is a Preview of What You'll Learn Here... The difference between deep learning and machine learning Deep neural networks Convolutional neural networks Building deep learning models with Keras Multi-layer perceptron network models Activation functions Handwritten recognition using MNIST Solving multi-class classification problems Recurrent neural networks and sequence classification And much more... Convolutional Neural Networks in Python Here Is a Preview of What You'll Learn In This Book... Convolutional neural networks structure How convolutional neural networks actually work Convolutional neural networks applications The importance of convolution operator Different convolutional neural networks layers and their importance Arrangement of spatial parameters How and when to use stride and zero-padding Method of parameter sharing Matrix multiplication and its importance Pooling and dense layers Introducing non-linearity relu activation function How to train your convolutional neural network models using backpropagation How and why to apply dropout CNN model training process How to build a convolutional neural network Generating predictions and calculating loss functions How to train and evaluate your MNIST classifier How to build a simple image classification CNN And much, much more! Python Machine Learning Here Is A Preview Of What You'll Learn Here... Basics behind machine learning techniques Different machine learning algorithms Fundamental machine learning applications and their importance Getting started with machine learning in Python, installing and starting SciPy Loading data and importing different libraries Data summarization and data visualization Evaluation of machine learning models and making predictions Most commonly used machine learning algorithms, linear and logistic regression, decision trees support vector machines, k-nearest neighbors, random forests Solving multi-clasification problems Data visualization with Matplotlib and data transformation with Pandas and Scikit-learn Solving multi-label classification problems And much, much more... Machine Learning With TensorFlow Here Is a Preview of What You'll Learn Here... What is machine learning Main uses and benefits of machine learning How to get started with TensorFlow, installing and loading data Data flow graphs and basic TensorFlow expressions How to define your data flow graphs and how to use TensorBoard for data visualization Main TensorFlow operations and building tensors How to perform data transformation using different techniques How to build high performance data pipelines using TensorFlow Dataset framework How to create TensorFlow iterators Creating MNIST classifiers with one-hot transformation Get this book bundle NOW and SAVE money!

Up and Running Google AutoML and AI Platform: Building Machine Learning and NLP Models Using AutoML and AI Platform for Production Environment (English Edition) Springer Nature
Learn how to apply test-driven development (TDD) to machine-learning algorithms—and catch mistakes that could sink your analysis. In this practical guide, author Matthew Kirk takes you through the principles of TDD and machine learning, and shows you how to apply TDD to several machine-learning algorithms, including Naive Bayesian classifiers and Neural Networks. Machine-learning algorithms often have tests baked in, but they can't account for human errors in coding. Rather than blindly rely on machine-learning results as many researchers have, you can mitigate the risk of errors with TDD and write clean, stable machine-learning code. If you're familiar with Ruby 2.1, you're ready to start. Apply TDD to write and run tests before you start coding Learn the best uses and tradeoffs of eight machine learning algorithms Use real-world examples to test each algorithm through engaging, hands-on exercises Understand the similarities between TDD and the scientific method for validating solutions Be aware of the risks of machine learning, such as underfitting and overfitting data Explore techniques for improving your machine-learning models or data extraction

Building Intelligent Cloud Applications Frank Millstein
This book covers the research area from multiple viewpoints including bibliometric analysis, reviews, empirical analysis, platforms, and future applications. The centralized training of deep learning and machine learning models not only incurs a high communication cost of data transfer into the cloud systems but also raises the privacy protection concerns of data providers. This book aims at targeting researchers and practitioners to delve deep into core issues in federated learning research to transform next-generation artificial intelligence applications. Federated learning enables the distribution of the learning models across the devices and systems which perform initial training and report the updated model attributes to the centralized cloud servers for secure and privacy-preserving attribute aggregation and global model development. Federated learning benefits in terms of privacy, communication efficiency, data security, and contributors' control of their critical data.

Lifelong Machine Learning Federated Learning Systems
Deep Learning with Structured Data teaches you powerful data analysis techniques for tabular data and relational databases. Summary Deep learning offers the potential to identify complex patterns and relationships hidden in data of all sorts. Deep Learning with Structured Data shows you how to apply powerful deep learning analysis techniques to the kind of structured, tabular data you'll find in the relational databases that real-world businesses depend on. Filled with practical, relevant applications, this book teaches you how deep learning can augment your existing machine learning and business intelligence systems. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Here's a dirty secret: Half of the time in most data science projects is spent cleaning and preparing data. But there's a better way: Deep learning techniques optimized for tabular data and relational databases deliver insights and analysis without requiring intense feature engineering. Learn the skills to unlock deep learning performance with much less data filtering, validating, and scrubbing. About the book Deep Learning with Structured Data teaches you powerful data analysis techniques for tabular data and relational databases. Get started using a dataset based on the Toronto transit system. As you work through the book, you'll learn how easy it is to set up tabular data for deep learning, while solving crucial production concerns like deployment and performance monitoring. What's inside When and where to

use deep learning The architecture of a Keras deep learning model Training, deploying, and maintaining models Measuring performance About the reader For readers with intermediate Python and machine learning skills. About the author Mark Ryan is a Data Science Manager at Intact Insurance. He holds a Master's degree in Computer Science from the University of Toronto. Table of Contents 1 Why deep learning with structured data? 2 Introduction to the example problem and Pandas dataframes 3 Preparing the data, part 1: Exploring and cleansing the data 4 Preparing the data, part 2: Transforming the data 5 Preparing and building the model 6 Training the model and running experiments 7 More experiments with the trained model 8 Deploying the model 9 Recommended next steps

Programming With Python Createspace Independent Publishing Platform

"I'll bet the rest of my professional career that the future of your business is big data and machine learning applied to the business opportunities, customer challenges, and things before you." - Eric Schmidt "Artificial Intelligence, deep learning, machine learning - whatever you're doing if you don't understand it - learn it. Because otherwise you're going to be a dinosaur within 3 years." - Mark Cuban Discover and learn all about the machine learning. This book cover the basic and fundamental subjects on machine learning and its application. Are you clueless about what is machine learning about? Have you ever wonder how can a machine, Deep Blue beats Garry Kasparov, a reigning world champion in chess? Do you know that a handful of the Fortune 500 companies are using machine learning in new creative ways? People worry that computers will get too smart and take over the world, but the real problem is that they're too stupid and they've already taken over the world. - Pedro Domingos Machine learning has been around for more than a decade and yet its usage is still at its infancy and innovating in an interesting way. Companies are investing heavily in machine learning and are reaping generous rewards. Some of their products have become an essential part of our daily activities such as the navigation system in our vehicles. "But much of what we do with machine learning happens beneath the surface. Machine learning drives our algorithms for demand forecasting, product search ranking, product and deals recommendations, merchandising placements, fraud detection, translations, and much more. Though less visible, much of the impact of machine learning will be of this type - quietly but meaningfully improving core operations." - Jeff Bezos In this book, you will understand and learn about the basic of machine learning and its applications, which is the fundamental block of Artificial Intelligence. In this book, Machine Learning For Beginners - Your Starter Guide For Data Management, Model Training, Neural Networks, Machine Learning Algorithms Learn about the three types of machine learning Learn about the machine learning algorithms such as KNN. Discover the machine learning tools that you could use Learn about data acquisition and data management Learn about model training, validation and application Learn about how neural networks work and usage. And many more.. Final Words: Perhaps, even if you feel that you may know some of the subjects discussed here, be open and this book a chance. You may find a new perspective, learn something new and pick up some valuable tools that drop off your radar. It's written in an informative way for easy reading. "The best investment you can make is in yourself" - Warren Buffett Find out more.. Take Action Now Don't procrastinate. Scroll up and pick up your copy today by clicking the yellow button .

Federated Learning Systems "O'Reilly Media, Inc."

Build real-world Artificial Intelligence applications with Python to intelligently interact with the world around you About This Book Step into the amazing world of intelligent apps using this comprehensive guide Enter the world of Artificial Intelligence, explore it, and create your own applications Work through simple yet insightful examples that will get you up and running with Artificial Intelligence in no time Who This Book Is For This book is for Python developers who want to build real-world Artificial Intelligence applications. This book is friendly to Python beginners, but being familiar with Python would be useful to play around with the code. It will also be useful for experienced Python programmers who are looking to use Artificial Intelligence techniques in their existing technology stacks. What You Will Learn Realize different classification and regression techniques Understand the concept of clustering and how to use it to automatically segment data See how to build an intelligent recommender system Understand logic programming and how to use it Build automatic speech recognition systems Understand the basics of heuristic search and genetic programming Develop games using Artificial Intelligence Learn how reinforcement learning works Discover how to build intelligent applications centered on images, text, and time series data See how to use deep learning algorithms and build applications based on it In Detail Artificial Intelligence is becoming increasingly relevant in the modern world where everything is driven by technology and data. It is used extensively across many fields such as search engines, image recognition, robotics, finance, and so on. We will explore various real-world scenarios in this book and you'll learn about various algorithms that can be used to build Artificial Intelligence applications. During the course of this book, you will find out how to make informed decisions about what algorithms to use in a given context. Starting from the basics of Artificial Intelligence, you will learn how to develop various building blocks using different data mining techniques. You will see how to implement different algorithms to get the best possible results, and will understand how to apply them to real-world scenarios. If you want to add an intelligence layer to any application that's based on images, text, stock market, or some other form of data, this exciting book on Artificial Intelligence will definitely be your guide! Style and approach This highly practical book will show you how to implement Artificial Intelligence. The book provides multiple examples enabling you to create smart applications to meet the needs of your organization. In every chapter, we explain an algorithm, implement it, and then build a smart application.

Proceedings of the international conference on Machine Learning Lulu.com

Grasp machine learning concepts, techniques, and algorithms with the help of real-world examples using Python libraries such as TensorFlow and scikit-learn Key FeaturesExploit the power of Python to explore the world of data mining and data analyticsDiscover machine learning algorithms to solve complex challenges faced by data scientists todayUse Python libraries such as TensorFlow and Keras to create smart cognitive actions for your projectsBook Description The surge in interest in machine learning (ML) is due to the fact that it revolutionizes automation by learning patterns in data and using them to make predictions and decisions. If you're interested in ML, this book will serve as your entry point to ML. Python Machine Learning By Example begins with an introduction to important ML concepts and implementations using Python libraries. Each chapter of the book walks you through an industry adopted application. You'll implement ML techniques in areas such as exploratory data

analysis, feature engineering, and natural language processing (NLP) in a clear and easy-to-follow way. With the help of this extended and updated edition, you'll understand how to tackle data-driven problems and implement your solutions with the powerful yet simple Python language and popular Python packages and tools such as TensorFlow, scikit-learn, gensim, and Keras. To aid your understanding of popular ML algorithms, the book covers interesting and easy-to-follow examples such as news topic modeling and classification, spam email detection, stock price forecasting, and more. By the end of the book, you'll have put together a broad picture of the ML ecosystem and will be well-versed with the best practices of applying ML techniques to make the most out of new opportunities. What you will learnUnderstand the important concepts in machine learning and data scienceUse Python to explore the world of data mining and analyticsScale up model training using varied data complexities with Apache SparkDelve deep into text and NLP using Python libraries such NLTK and gensimSelect and build an ML model and evaluate and optimize its performanceImplement ML algorithms from scratch in Python, TensorFlow, and scikit-learnWho this book is for If you're a machine learning aspirant, data analyst, or data engineer highly passionate about machine learning and want to begin working on ML assignments, this book is for you. Prior knowledge of Python coding is assumed and basic familiarity with statistical concepts will be beneficial although not necessary.

Machine Learning With Tensorflow Simon and Schuster

The exponential growth in data over the last decade coupled with a drastic drop in cost of storage has enabled organizations to amass a large amount of data. This vast data becomes the new natural resource that these organizations must tap in to innovate and stay ahead of the competition, and they must do so in a secure environment that protects the data throughout its lifecyle and data access in real time at any time. When it comes to security, nothing can rival IBM® Z, the multi-workload transactional platform that powers the core business processes of the majority of the Fortune 500 enterprises with unmatched security, availability, reliability, and scalability. With core transactions and data originating on IBM Z, it simply makes sense for analytics to exist and run on the same platform. For years, some businesses chose to move their sensitive data off IBM Z to platforms that include data lakes, Hadoop, and warehouses for analytics processing. However, the massive growth of digital data, the punishing cost of security exposures as well as the unprecedented demand for instant actionable intelligence from data in real time have convinced them to rethink that decision and, instead, embrace the strategy of data gravity for analytics. At the core of data gravity is the conviction that analytics must exist and run where the data resides. An IBM client eloquently compares this change in analytics strategy to a shift from "moving the ocean to the boat to moving the boat to the ocean," where the boat is the analytics and the ocean is the data. IBM respects and invests heavily on data gravity because it recognizes the tremendous benefits that data gravity can deliver to you, including reduced cost and minimized security risks. IBM Machine Learning for z/OS® is one of the offerings that decidedly move analytics to Z where your mission-critical data resides. In the inherently secure Z environment, your machine learning scoring services can co-exist with your transactional applications and data, supporting high throughput and minimizing response time while delivering consistent service level agreements (SLAs). This book introduces Machine Learning for z/OS version 1.1.0 and describes its unique value

proposition. It provides step-by-step guidance for you to get started with the program, including best practices for capacity planning, installation and configuration, administration and operation. Through a retail example, the book shows how you can use the versatile and intuitive web user interface to quickly train, build, evaluate, and deploy a model. Most importantly, it examines use cases across industries to illustrate how you can easily turn your massive data into valuable insights with Machine Learning for z/OS.

Building Machine Learning Pipelines Springer Nature

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

Machine Learning for Kids "O'Reilly Media, Inc."

Machine Learning with TensorFlow TensorFlow is a powerful open source software library for performing various numerical data flow graphs. With its powerful resources, TensorFlow is perfect for machine learning enthusiasts offering plenty of workspace where you can improve your machine learning techniques and build your own machine learning algorithms. Thanks to its capability, in recent times TensorFlow definitely has made its way into the software mainstream, so everyone who is interested in machine learnings definitely should considers getting hands on TensorFlow practices. With this book as your guide, you will get your hands on TensorFlow machine learning techniques, learn how to perform different neural network operations, learn how to deal with massive datasets and finally build your first machine learning model for data classification. Here Is a Preview of What You'll Learn Here… What is machine learning Main uses and benefits of machine learning How to get started with TensorFlow, installing and loading data Data flow graphs and basic TensorFlow expressions How to define your data flow graphs and how to use TensorBoard for data visualization Main TensorFlow operations and building tensors How to perform data transformation using different techniques How to build high performance data pipelines using TensorFlow Dataset framework How to create TensorFlow iterators Creating MNIST classifiers with one-hot transformation Get this book NOW and learn how to do various machine learning tasks using TensorFlow!

Interpretable Machine Learning BPB Publications

Machine learning is a powerful tool for making accurate predictions and improving decision-making based on data-driven insights. However, building accurate and reliable machine learning models

requires a thorough understanding of the machine learning workflow, from data preprocessing and exploration to model training and deployment. In this ebook, we provide a practical guide to machine learning essentials, covering everything from the basics of supervised and unsupervised learning to deep learning and model deployment. We explore common machine learning algorithms, including decision trees, support vector machines, and neural networks, and provide examples of how they can be used in real-world applications. We also delve into data preprocessing and exploration, discussing techniques for cleaning, transforming, and scaling data to make it suitable for analysis, and exploring ways to gain insights into the properties and relationships of the data. We discuss best practices for model training and evaluation, and explore strategies for deploying and maintaining machine learning models in a production environment. Whether you're an experienced data scientist or just starting out, this ebook provides a comprehensive guide to building accurate and reliable machine learning models that can transform your business and improve decision-making based on data-driven insights.

Machine Learning Essentials: A Practical Guide to Building Accurate and Reliable Models "O'Reilly Media, Inc."

Deep learning is often viewed as the exclusive domain of math PhDs and big tech companies. But as this hands-on guide demonstrates, programmers comfortable with Python can achieve impressive results in deep learning with little math background, small amounts of data, and minimal code. How? With fastai, the first library to provide a consistent interface to the most frequently used deep learning applications. Authors Jeremy Howard and Sylvain Gugger, the creators of fastai, show you how to train a model on a wide range of tasks using fastai and PyTorch. You'll also dive progressively further into deep learning theory to gain a complete understanding of the algorithms behind the scenes. Train models in computer vision, natural language processing, tabular data, and collaborative filtering Learn the latest deep learning techniques that matter most in practice Improve accuracy, speed, and reliability by understanding how deep learning models work Discover how to turn your models into web applications Implement deep learning algorithms from scratch Consider the ethical implications of your work Gain insight from the foreword by PyTorch cofounder, Soumith Chintala

Analytics for the Internet of Things (IoT) Springer Nature

Get up and running with machine learning life cycle management and implement MLOps in your organization Key FeaturesBecome well-versed with MLOps techniques to monitor the quality of machine learning models in productionExplore a monitoring framework for ML models in production and learn about end-to-end traceability for deployed modelsPerform CI/CD to automate new implementations in ML pipelinesBook Description Engineering MLps presents comprehensive insights into MLOps coupled with real-world examples in Azure to help you to write programs, train robust and scalable ML models, and build ML pipelines to train and deploy models securely in production. The book begins by familiarizing you with the MLOps workflow so you can start writing programs to train ML models. Then you'll then move on to explore options for serializing and packaging ML models post-training to deploy them to facilitate machine learning inference, model interoperability, and end-to-end model traceability. You'll learn how to build ML pipelines, continuous integration and continuous delivery (CI/CD) pipelines, and monitor pipelines to systematically build, deploy, monitor,

and govern ML solutions for businesses and industries. Finally, you'll apply the knowledge you've gained to build real-world projects. By the end of this ML book, you'll have a 360-degree view of MLOps and be ready to implement MLOps in your organization. What you will learnFormulate data governance strategies and pipelines for ML training and deploymentGet to grips with implementing ML pipelines, CI/CD pipelines, and ML monitoring pipelinesDesign a robust and scalable microservice and API for test and production environmentsCurate your custom CD processes for related use cases and organizationsMonitor ML models, including monitoring data drift, model drift, and application performanceBuild and maintain automated ML systemsWho this book is for This MLOps book is for data scientists, software engineers, DevOps engineers, machine learning engineers, and business and technology leaders who want to build, deploy, and maintain ML systems in production using MLOps principles and techniques. Basic knowledge of machine learning is necessary to get started with this book.

Designing Deep Learning Systems "O'Reilly Media, Inc."

Serverless computing is radically changing the way we build and deploy applications. With cloud providers running servers and managing machine resources, companies now can focus solely on the application's business logic and functionality. This hands-on book shows experienced programmers how to build and deploy scalable machine learning and deep learning models using serverless architectures with Microsoft Azure. You'll learn step-by-step how to code machine learning into your projects using Python and pre-trained models that include tools such as image recognition, speech recognition, and classification. You'll also examine issues around deployment and continuous delivery including scaling, security, and monitoring. This book is divided into four parts: Cloud-based development: learn the basics of serverless computing with machine learning, functions as a service (FaaS), and the use of APIs Adding intelligence: create serverless applications using Azure Functions; learn how to use pre-built machine-learning and deep-learning models Deployment and continuous delivery: get up to speed with Azure Kubernetes Service, as well as Azure Security Center, and Azure Monitoring Application examples: deliver data at the edge, build conversational interfaces, and use convolutional neural networks for image classification

Dataset Shift in Machine Learning MIT Press

A comprehensive introduction to machine learning that uses probabilistic models and inference as a unifying approach. Today's Web-enabled deluge of electronic data calls for automated methods of data analysis. Machine learning provides these, developing methods that can automatically detect patterns in data and then use the uncovered patterns to predict future data. This textbook offers a comprehensive and self-contained introduction to the field of machine learning, based on a unified, probabilistic approach. The coverage combines breadth and depth, offering necessary background material on such topics as probability, optimization, and linear algebra as well as discussion of recent developments in the field, including conditional random fields, L1 regularization, and deep learning. The book is written in an informal, accessible style, complete with pseudo-code for the most important algorithms. All topics are copiously illustrated with color images and worked examples drawn from such application domains as biology, text processing, computer vision, and robotics. Rather than providing a cookbook of different heuristic methods, the book stresses a principled model-based approach, often using the language of graphical models to specify models in

a concise and intuitive way. Almost all the models described have been implemented in a MATLAB software package—PMTK (probabilistic modeling toolkit)—that is freely available online. The book is suitable for upper-level undergraduates with an introductory-level college math background and beginning graduate students.

Machine Learning Contests: A Guidebook Frank Millstein

Semi-supervised learning is a learning paradigm concerned with the study of how computers and natural systems such as humans learn in the presence of both labeled and unlabeled data. Traditionally, learning has been studied either in the unsupervised paradigm (e.g., clustering, outlier detection) where all the data are unlabeled, or in the supervised paradigm (e.g., classification, regression) where all the data are labeled. The goal of semi-supervised learning is to understand how combining labeled and unlabeled data may change the learning behavior, and design algorithms that take advantage of such a combination. Semi-supervised learning is of great interest in machine learning and data mining because it can use readily available unlabeled data to improve supervised learning tasks when the labeled data are scarce or expensive. Semi-supervised learning also shows potential as a quantitative tool to understand human category learning, where most of the input is self-evidently unlabeled. In this introductory book, we present some popular semi-supervised learning models, including self-training, mixture models, co-training and multiview learning, graph-based methods, and semi-supervised support vector machines. For each model, we discuss its basic mathematical formulation. The success of semi-supervised learning depends critically on some underlying assumptions. We emphasize the assumptions made by each model and give counterexamples when appropriate to demonstrate the limitations of the different models. In addition, we discuss semi-supervised learning for cognitive psychology. Finally, we give a computational learning theoretic perspective on semi-supervised learning, and we conclude the book with a brief discussion of open questions in the field. Table of Contents: Introduction to Statistical Machine Learning / Overview of Semi-Supervised Learning / Mixture Models and EM / Co-Training / Graph-Based Semi-Supervised Learning / Semi-Supervised Support Vector Machines / Human Semi-Supervised Learning / Theory and Outlook

Practicing Trustworthy Machine Learning "O'Reilly Media, Inc."

Dodge costly and time-consuming infrastructure tasks, and rapidly bring your machine learning models to production with MLOps and pre-built serverless tools! In MLOps Engineering at Scale you will learn: Extracting, transforming, and loading datasets Querying datasets with SQL Understanding automatic differentiation in PyTorch Deploying model training pipelines as a service endpoint Monitoring and managing your pipeline's life cycle Measuring performance improvements MLOps Engineering at Scale shows you how to put machine learning into production efficiently by using pre-built services from AWS and other cloud vendors. You'll learn how to rapidly create flexible and scalable machine learning systems without laboring over time-consuming operational tasks or taking on the costly overhead of physical hardware. Following a real-world use case for calculating taxi fares, you will engineer an MLOps pipeline for a PyTorch model using AWS server-less capabilities. About the technology A production-ready machine learning system includes efficient data pipelines, integrated monitoring, and means to scale up and down based on demand. Using cloud-based services to implement ML infrastructure reduces development time and lowers hosting costs.

Serverless MLOps eliminates the need to build and maintain custom infrastructure, so you can concentrate on your data, models, and algorithms. About the book MLOps Engineering at Scale teaches you how to implement efficient machine learning systems using pre-built services from AWS and other cloud vendors. This easy-to-follow book guides you step-by-step as you set up your serverless ML infrastructure, even if you've never used a cloud platform before. You'll also explore tools like PyTorch Lightning, Optuna, and MLFlow that make it easy to build pipelines and scale your deep learning models in production. What's inside Reduce or eliminate ML infrastructure management Learn state-of-the-art MLOps tools like PyTorch Lightning and MLFlow Deploy training pipelines as a service endpoint Monitor and manage your pipeline's life cycle Measure performance improvements About the reader Readers need to know Python, SQL, and the basics of machine learning. No cloud experience required. About the author Carl Osipov implemented his first neural net in 2000 and has worked on deep learning and machine learning at Google and IBM. Table of Contents PART 1 - MASTERING THE DATA SET 1 Introduction to serverless machine learning 2 Getting started with the data set 3 Exploring and preparing the data set 4 More exploratory data analysis and data preparation PART 2 - PYTORCH FOR SERVERLESS MACHINE LEARNING 5 Introducing PyTorch: Tensor basics 6 Core PyTorch: Autograd, optimizers, and utilities 7 Serverless machine learning at scale 8 Scaling out with distributed training PART 3 - SERVERLESS MACHINE LEARNING PIPELINE 9 Feature selection 10 Adopting PyTorch Lightning 11 Hyperparameter optimization 12 Machine learning pipeline

Artificial Intelligence with Python MIT Press

Federated Learning SystemsSpringer Nature

Optimizing End-to-end Machine Learning Pipelines for Model Training Frank Millstein

This book systematically introduces the competitions in the field of algorithm and machine learning. The first author of the book has won 5 championships and 5 runner-ups in domestic and international algorithm competitions. Firstly, it takes common competition scenarios as a guide by giving the main processes of using machine learning to solve real-world problems, namely problem modelling, data exploration, feature engineering, model training. And then lists the main points of difficulties, general ideas with solutions in the whole process. Moreover, this book comprehensively covers several common problems in the field of machine learning competitions such as recommendation, temporal prediction, advertising, text computing, etc. The authors, also knew as "competition professionals", will explain the actual cases in detail and teach you various processes, routines, techniques and strategies, which is a rare treasure book for all competition enthusiasts. It is very suitable for readers who are interested in algorithm competitions and deep learning algorithms in practice, or computer-related majors.

Machine Learning Packt Publishing Ltd

A hands-on, application-based introduction to machine learning and artificial intelligence (AI) that guides young readers through creating compelling AI-powered games and applications using the Scratch programming language. Machine learning (also known as ML) is one of the building blocks of AI, or artificial intelligence. AI is based on the idea that computers can learn on their own, with your help. Machine Learning for Kids will introduce you to machine learning, painlessly. With this book and its free, Scratch-based, award-winning companion website, you'll see how easy it is to add

machine learning to your own projects. You don't even need to know how to code! As you work through the book you'll discover how machine learning systems can be taught to recognize text, images, numbers, and sounds, and how to train your models to improve their accuracy. You'll turn your models into fun computer games and apps, and see what happens when they get confused by bad data. You'll build 13 projects step-by-step from the ground up, including: • Rock, Paper, Scissors game that recognizes your hand shapes • An app that recommends movies based on other movies that you like • A computer character that reacts to insults and compliments • An interactive virtual assistant (like Siri or Alexa) that obeys commands • An AI version of Pac-Man, with a smart character that knows how to avoid ghosts NOTE: This book includes a Scratch tutorial for beginners, and step-by-step instructions for every project. Ages 12+

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