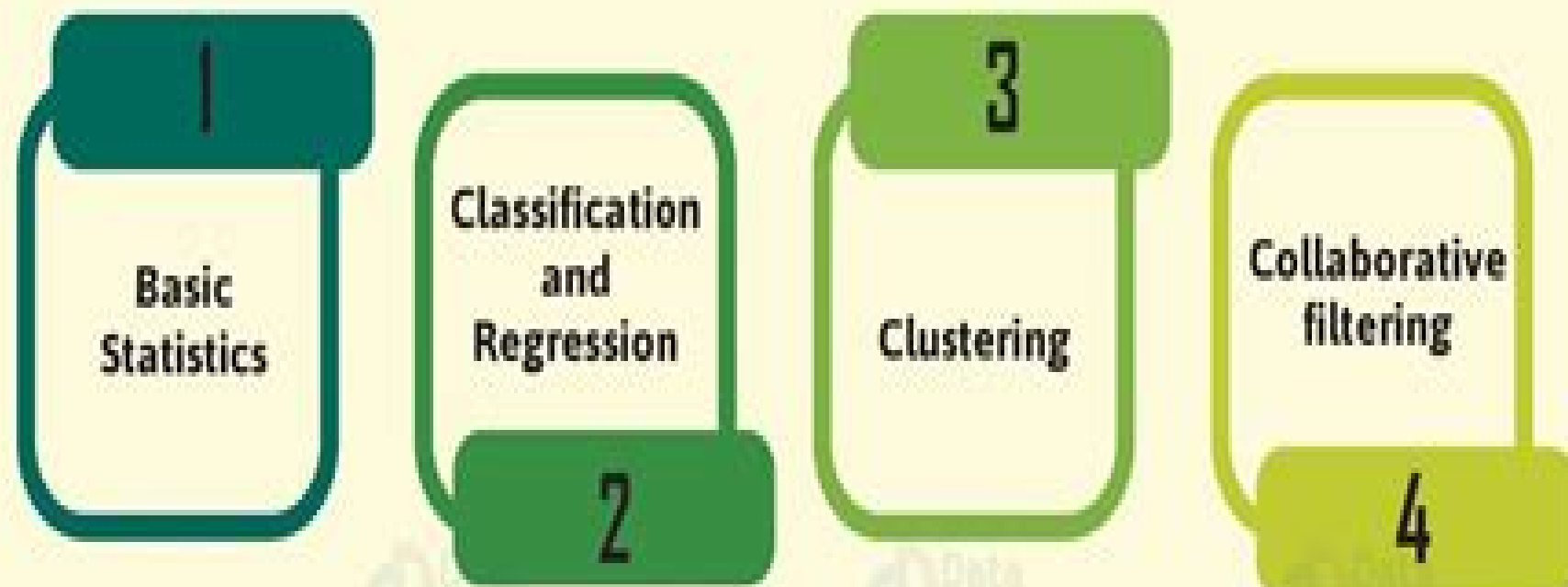


Machine Learning Algorithms in Apache Spark[☆]



Machine Learning With Spark

Deepak Gowda



Machine Learning With Spark:

Learning Spark Jules S. Damji, Brooke Wenig, Tathagata Das, Denny Lee, 2020-07-16 Data is bigger arrives faster and comes in a variety of formats and it all needs to be processed at scale for analytics or machine learning But how can you process such varied workloads efficiently Enter Apache Spark Updated to include Spark 3.0 this second edition shows data engineers and data scientists why structure and unification in Spark matters Specifically this book explains how to perform simple and complex data analytics and employ machine learning algorithms Through step by step walk throughs code snippets and notebooks you ll be able to Learn Python SQL Scala or Java high level Structured APIs Understand Spark operations and SQL Engine Inspect tune and debug Spark operations with Spark configurations and Spark UI Connect to data sources JSON Parquet CSV Avro ORC Hive S3 or Kafka Perform analytics on batch and streaming data using Structured Streaming Build reliable data pipelines with open source Delta Lake and Spark Develop machine learning pipelines with MLlib and productionize models using MLflow

Beginning Apache Spark 3 Hien Luu, 2021 Take a journey toward discovering learning and using Apache Spark 3.0 In this book you will gain expertise on the powerful and efficient distributed data processing engine inside of Apache Spark its user friendly comprehensive and flexible programming model for processing data in batch and streaming and the scalable machine learning algorithms and practical utilities to build machine learning applications Beginning Apache Spark 3 begins by explaining different ways of interacting with Apache Spark such as Spark Concepts and Architecture and Spark Unified Stack Next it offers an overview of Spark SQL before moving on to its advanced features It covers tips and techniques for dealing with performance issues followed by an overview of the structured streaming processing engine It concludes with a demonstration of how to develop machine learning applications using Spark MLlib and how to manage the machine learning development lifecycle This book is packed with practical examples and code snippets to help you master concepts and features immediately after they are covered in each section After reading this book you will have the knowledge required to build your own big data pipelines applications and machine learning applications You will Master the Spark unified data analytics engine and its various components Work in tandem to provide a scalable fault tolerant and performant data processing engine Leverage the user friendly and flexible programming model to perform simple to complex data analytics using dataframe and Spark SQL Develop machine learning applications using Spark MLlib Manage the machine learning development lifecycle using MLflow

Learning Spark Holden Karau, Andy Konwinski, Patrick Wendell, Matei Zaharia, 2015-01-28 Data in all domains is getting bigger How can you work with it efficiently Recently updated for Spark 1.3 this book introduces Apache Spark the open source cluster computing system that makes data analytics fast to write and fast to run With Spark you can tackle big datasets quickly through simple APIs in Python Java and Scala This edition includes new information on Spark SQL Spark Streaming setup and Maven coordinates Written by the developers of Spark this book will have data scientists and engineers up and running in no time You ll learn

how to express parallel jobs with just a few lines of code and cover applications from simple batch jobs to stream processing and machine learning Quickly dive into Spark capabilities such as distributed datasets in memory caching and the interactive shell Leverage Spark's powerful built-in libraries including Spark SQL Spark Streaming and MLlib Use one programming paradigm instead of mixing and matching tools like Hive Hadoop Mahout and Storm Learn how to deploy interactive batch and streaming applications Connect to data sources including HDFS Hive JSON and S3 Master advanced topics like data partitioning and shared variables Machine Learning with Spark - Second Edition Rajdeep Dua, Manpreet Singh Ghotra, Nick Pentreath, 2017 Create scalable machine learning applications to power a modern data driven business using Spark 2 x About This Book Get to the grips with the latest version of Apache Spark Utilize Spark's machine learning library to implement predictive analytics Leverage Spark's powerful tools to load analyze clean and transform your data Who This Book Is For If you have a basic knowledge of machine learning and want to implement various machine learning concepts in the context of Spark ML this book is for you You should be well versed with the Scala and Python languages What You Will Learn Get hands on with the latest version of Spark ML Create your first Spark program with Scala and Python Set up and configure a development environment for Spark on your own computer as well as on Amazon EC2 Access public machine learning datasets and use Spark to load process clean and transform data Use Spark's machine learning library to implement programs by utilizing well known machine learning models Deal with large scale text data including feature extraction and using text data as input to your machine learning models Write Spark functions to evaluate the performance of your machine learning models In Detail This book will teach you about popular machine learning algorithms and their implementation You will learn how various machine learning concepts are implemented in the context of Spark ML You will start by installing Spark in a single and multinode cluster Next you'll see how to execute Scala and Python based programs for Spark ML Then we will take a few datasets and go deeper into clustering classification and regression Toward the end we will also cover text processing using Spark ML Once you have learned the concepts they can be applied to implement algorithms in either green field implementations or to migrate existing systems to this new platform You can migrate from Mahout or Scikit to use Spark ML By the end of this book you will acquire the skills to leverage Spark's features to create your own scalable machine learning applications and power a modern data driven business Style and approach This practical tutorial with real world use cases enables you to develop your own machine learning systems with Spark The examples will help you combine various techniques and models into an intelligent machine learning system *Machine Learning with Spark* Nick Pentreath, 2015-02-20 If you are a Scala Java or Python developer with an interest in machine learning and data analysis and are eager to learn how to apply common machine learning techniques at scale using the Spark framework this is the book for you While it may be useful to have a basic understanding of Spark no previous experience is required *Machine Learning with Apache Spark Quick Start Guide* Jillur Quddus, 2018-12-26 Combine advanced analytics including Machine Learning

Deep Learning Neural Networks and Natural Language Processing with modern scalable technologies including Apache Spark to derive actionable insights from Big Data in real time

Key Features

- Make a hands on start in the fields of Big Data Distributed Technologies and Machine Learning
- Learn how to design develop and interpret the results of common Machine Learning algorithms
- Uncover hidden patterns in your data in order to derive real actionable insights and business value

Book Description

Every person and every organization in the world manages data whether they realize it or not Data is used to describe the world around us and can be used for almost any purpose from analyzing consumer habits to fighting disease and serious organized crime Ultimately we manage data in order to derive value from it and many organizations around the world have traditionally invested in technology to help process their data faster and more efficiently But we now live in an interconnected world driven by mass data creation and consumption where data is no longer rows and columns restricted to a spreadsheet but an organic and evolving asset in its own right With this realization comes major challenges for organizations how do we manage the sheer size of data being created every second think not only spreadsheets and databases but also social media posts images videos music blogs and so on And once we can manage all of this data how do we derive real value from it The focus of Machine Learning with Apache Spark is to help us answer these questions in a hands on manner We introduce the latest scalable technologies to help us manage and process big data We then introduce advanced analytical algorithms applied to real world use cases in order to uncover patterns derive actionable insights and learn from this big data What you will learn

- Understand how Spark fits in the context of the big data ecosystem
- Understand how to deploy and configure a local development environment using Apache Spark
- Understand how to design supervised and unsupervised learning models
- Build models to perform NLP deep learning and cognitive services using Spark ML libraries
- Design real time machine learning pipelines in Apache Spark
- Become familiar with advanced techniques for processing a large volume of data by applying machine learning algorithms

Who this book is for

This book is aimed at Business Analysts Data Analysts and Data Scientists who wish to make a hands on start in order to take advantage of modern Big Data technologies combined with Advanced Analytics

Hands-On Deep Learning with Apache Spark Guglielmo Iozzia, 2019-01-31

Speed up the design and implementation of deep learning solutions using Apache Spark

Key Features

- Explore the world of distributed deep learning with Apache Spark
- Train neural networks with deep learning libraries such as BigDL and TensorFlow
- Develop Spark deep learning applications to intelligently handle large and complex datasets

Book Description

Deep learning is a subset of machine learning where datasets with several layers of complexity can be processed Hands On Deep Learning with Apache Spark addresses the sheer complexity of technical and analytical parts and the speed at which deep learning solutions can be implemented on Apache Spark The book starts with the fundamentals of Apache Spark and deep learning You will set up Spark for deep learning learn principles of distributed modeling and understand different types of neural nets You will then implement deep learning models such as convolutional neural

networks CNNs recurrent neural networks RNNs and long short term memory LSTM on Spark As you progress through the book you will gain hands on experience of what it takes to understand the complex datasets you are dealing with During the course of this book you will use popular deep learning frameworks such as TensorFlow Deeplearning4j and Keras to train your distributed models By the end of this book you ll have gained experience with the implementation of your models on a variety of use cases What you will learn Understand the basics of deep learning Set up Apache Spark for deep learning Understand the principles of distribution modeling and different types of neural networks Obtain an understanding of deep learning algorithms Discover textual analysis and deep learning with Spark Use popular deep learning frameworks such as Deeplearning4j TensorFlow and Keras Explore popular deep learning algorithms Who this book is for If you are a Scala developer data scientist or data analyst who wants to learn how to use Spark for implementing efficient deep learning models Hands On Deep Learning with Apache Spark is for you Knowledge of the core machine learning concepts and some exposure to Spark will be helpful Machine Learning with Spark Rajdeep Dua, Manpreet Singh Ghotra, Nick Pentreath, 2017-04-28 Create scalable machine learning applications to power a modern data driven business using Spark 2 x About This Book Get to the grips with the latest version of Apache Spark Utilize Spark s machine learning library to implement predictive analytics Leverage Spark s powerful tools to load analyze clean and transform your data Who This Book Is For If you have a basic knowledge of machine learning and want to implement various machine learning concepts in the context of Spark ML this book is for you You should be well versed with the Scala and Python languages What You Will Learn Get hands on with the latest version of Spark ML Create your first Spark program with Scala and Python Set up and configure a development environment for Spark on your own computer as well as on Amazon EC2 Access public machine learning datasets and use Spark to load process clean and transform data Use Spark s machine learning library to implement programs by utilizing well known machine learning models Deal with large scale text data including feature extraction and using text data as input to your machine learning models Write Spark functions to evaluate the performance of your machine learning models In Detail This book will teach you about popular machine learning algorithms and their implementation You will learn how various machine learning concepts are implemented in the context of Spark ML You will start by installing Spark in a single and multinode cluster Next you ll see how to execute Scala and Python based programs for Spark ML Then we will take a few datasets and go deeper into clustering classification and regression Toward the end we will also cover text processing using Spark ML Once you have learned the concepts they can be applied to implement algorithms in either green field implementations or to migrate existing systems to this new platform You can migrate from Mahout or Scikit to use Spark ML By the end of this book you will acquire the skills to leverage Spark s features to create your own scalable machine learning applications and power a modern data driven business Style and approach This practical tutorial with real world use cases enables you to develop your own machine learning systems with Spark The examples will help you combine various

techniques and models into an intelligent machine learning system *Mastering Machine Learning with Spark 2.x* Alex Tellez,Max Pumperla,Michal Malohlava,2017-08-31 Unlock the complexities of machine learning algorithms in Spark to generate useful data insights through this data analysis tutorial About This Book Process and analyze big data in a distributed and scalable way Write sophisticated Spark pipelines that incorporate elaborate extraction Build and use regression models to predict flight delays Who This Book Is For Are you a developer with a background in machine learning and statistics who is feeling limited by the current slow and small data machine learning tools Then this is the book for you In this book you will create scalable machine learning applications to power a modern data driven business using Spark We assume that you already know the machine learning concepts and algorithms and have Spark up and running whether on a cluster or locally and have a basic knowledge of the various libraries contained in Spark What You Will Learn Use Spark streams to cluster tweets online Run the PageRank algorithm to compute user influence Perform complex manipulation of DataFrames using Spark Define Spark pipelines to compose individual data transformations Utilize generated models for off line on line prediction Transfer the learning from an ensemble to a simpler Neural Network Understand basic graph properties and important graph operations Use GraphFrames an extension of DataFrames to graphs to study graphs using an elegant query language Use K means algorithm to cluster movie reviews dataset In Detail The purpose of machine learning is to build systems that learn from data Being able to understand trends and patterns in complex data is critical to success it is one of the key strategies to unlock growth in the challenging contemporary marketplace today With the meteoric rise of machine learning developers are now keen on finding out how can they make their Spark applications smarter This book gives you access to transform data into actionable knowledge The book commences by defining machine learning primitives by the MLlib and H2O libraries You will learn how to use Binary classification to detect the Higgs Boson particle in the huge amount of data produced by CERN particle collider and classify daily health activities using ensemble Methods for Multi Class Classification Next you will solve a typical regression problem involving flight delay predictions and write sophisticated Spark pipelines You will analyze Twitter data with help of the doc2vec algorithm and K means clustering Finally you will build different pattern mining models using MLlib perform complex manipulation of DataFrames using Spark and Spark SQL and deploy your app in a Spark streaming environment Style and approach This book takes a practical approach to help you get to grips with using Spark for analytics and to implement machine learning algorithms We ll teach you about advanced applications of machine learning through illustrative examples These examples will equip you to harness the potential of machine learning through Spark in a variety of enterprise grade systems **Apache Spark 2.x Machine Learning Cookbook** Siamak Amirghodsi,Meenakshi Rajendran,Broderick Hall,Shuen Mei,2017 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 intu

Scaling Machine Learning with Spark Adi Polak,2023-03-07 Learn how to build end to end scalable machine learning solutions with Apache Spark With this practical guide author Adi Polak introduces data and ML practitioners to creative solutions that supersede today s traditional methods You ll learn a more holistic approach that takes you beyond specific requirements and organizational goals allowing data and ML practitioners to collaborate and understand each other better Scaling Machine Learning with Spark examines several technologies for building end to end distributed ML workflows based on the Apache Spark ecosystem with Spark MLlib MLflow TensorFlow and PyTorch If you re a data scientist who works with machine learning this book shows you when and why to use each technology You will Explore machine learning including distributed computing concepts and terminology Manage the ML lifecycle with MLflow Ingest data and perform basic preprocessing with Spark Explore feature engineering and use Spark to extract features Train a model with MLlib and build a pipeline to reproduce it Build a data system to combine the power of Spark with deep learning Get a step by step example of working with distributed TensorFlow Use PyTorch to scale machine learning and its internal architecture

Apache Spark for Machine Learning Deepak Gowda,2024-11-01 Develop your

data science skills with Apache Spark to solve real world problems for Fortune 500 companies using scalable algorithms on large cloud computing clusters

Key Features

- Apply techniques to analyze big data and uncover valuable insights for machine learning
- Learn to use cloud computing clusters for training machine learning models on large datasets
- Discover practical strategies to overcome challenges in model training deployment and optimization

Purchase of the print or Kindle book includes a free PDF eBook

Book Description

In the world of big data efficiently processing and analyzing massive datasets for machine learning can be a daunting task

Written by Deepak Gowda a data scientist with over a decade of experience and 30 patents this book provides a hands on guide to mastering Spark s capabilities for efficient data processing model building and optimization

With Deepak s expertise across industries such as supply chain cybersecurity and data center infrastructure he makes complex concepts easy to follow through detailed recipes

This book takes you through core machine learning concepts highlighting the advantages of Spark for big data analytics

It covers practical data preprocessing techniques including feature extraction and transformation supervised learning methods with detailed chapters on regression and classification and unsupervised learning through clustering and recommendation systems

You ll also learn to identify frequent patterns in data and discover effective strategies to deploy and optimize your machine learning models

Each chapter features practical coding examples and real world applications to equip you with the knowledge and skills needed to tackle complex machine learning tasks

By the end of this book you ll be ready to handle big data and create advanced machine learning models with Apache Spark

What you will learn

- Master Apache Spark for efficient large scale data processing and analysis
- Understand core machine learning concepts and their applications with Spark
- Implement data preprocessing techniques for feature extraction and transformation
- Explore supervised learning methods regression and classification algorithms
- Apply unsupervised learning for clustering tasks and recommendation systems
- Discover frequent pattern mining techniques to uncover data trends

Who this book is for

This book is ideal for data scientists ML engineers data engineers students and researchers who want to deepen their knowledge of Apache Spark s tools and algorithms

It s a must have for those struggling to scale models for real world problems and a valuable resource for preparing for interviews at Fortune 500 companies focusing on large dataset analysis model training and deployment

Advanced Machine Learning with Spark 2.x Tomasz Lelek, 2018

The aim of this course is to provide a practical understanding of advanced Machine Learning algorithms in Apache Spark to make predictions and recommendation and derive insights from large distributed datasets

This course starts with an introduction to the key concepts and data types that are fundamental to understanding distributed data processing and Machine Learning with Spark

Further to this we provide practical recipes that demonstrate some of the most popular algorithms in Spark leading to the creation of sophisticated Machine Learning pipelines and applications

The final sections are dedicated to more advanced use cases for Machine Learning streaming Natural Language Processing and Deep Learning

In each section we briefly establish the theoretical basis of the topic under

discussion and then cement our understanding with practical use cases **Resource description page** **Spark: The Definitive Guide** Bill Chambers, Matei Zaharia, 2018-02-08 Learn how to use, deploy and maintain Apache Spark with this comprehensive guide written by the creators of the open source cluster computing framework With an emphasis on improvements and new features in Spark 2.0 authors Bill Chambers and Matei Zaharia break down Spark topics into distinct sections each with unique goals You'll explore the basic operations and common functions of Spark's structured APIs as well as Structured Streaming a new high level API for building end-to-end streaming applications Developers and system administrators will learn the fundamentals of monitoring, tuning and debugging Spark and explore machine learning techniques and scenarios for employing MLlib Spark's scalable machine learning library Get a gentle overview of big data and Spark Learn about DataFrames, SQL and Datasets Spark's core APIs through worked examples Dive into Spark's low level APIs RDDs and execution of SQL and DataFrames Understand how Spark runs on a cluster Debug, monitor and tune Spark clusters and applications Learn the power of Structured Streaming Spark's stream processing engine Learn how you can apply MLlib to a variety of problems including classification or recommendation **Hands-On Machine Learning Recommender Systems with Apache Spark** Ernesto Lee, 2020-04-17 **Apache Spark Deep Learning Cookbook** Ahmed Sherif, Amrith Ravindra, 2018-07-13 A solution based guide to put your deep learning models into production with the power of Apache Spark **Key Features** Discover practical recipes for distributed deep learning with Apache Spark Learn to use libraries such as Keras and TensorFlow Solve problems in order to train your deep learning models on Apache Spark **Book Description** With deep learning gaining rapid mainstream adoption in modern day industries organizations are looking for ways to unite popular big data tools with highly efficient deep learning libraries As a result this will help deep learning models train with higher efficiency and speed With the help of the Apache Spark Deep Learning Cookbook you'll work through specific recipes to generate outcomes for deep learning algorithms without getting bogged down in theory From setting up Apache Spark for deep learning to implementing types of neural net this book tackles both common and not so common problems to perform deep learning on a distributed environment In addition to this you'll get access to deep learning code within Spark that can be reused to answer similar problems or tweaked to answer slightly different problems You will also learn how to stream and cluster your data with Spark Once you have got to grips with the basics you'll explore how to implement and deploy deep learning models such as Convolutional Neural Networks (CNN) and Recurrent Neural Networks (RNN) in Spark using popular libraries such as TensorFlow and Keras By the end of the book you'll have the expertise to train and deploy efficient deep learning models on Apache Spark **What you will learn** Set up a fully functional Spark environment Understand practical machine learning and deep learning concepts Apply built-in machine learning libraries within Spark Explore libraries that are compatible with TensorFlow and Keras Explore NLP models such as Word2vec and TF-IDF on Spark Organize dataframes for deep learning evaluation Apply testing and training modeling to

ensure accuracy Access readily available code that may be reusable Who this book is for If you're looking for a practical and highly useful resource for implementing efficiently distributed deep learning models with Apache Spark then the Apache Spark Deep Learning Cookbook is for you Knowledge of the core machine learning concepts and a basic understanding of the Apache Spark framework is required to get the best out of this book Additionally some programming knowledge in Python is a plus

Practical Machine Learning with Spark Gourav Gupta, Manish Gupta, Inder Singh Gupta, 2022-10-17 Explore the cosmic secrets of Distributed Processing for Deep Learning applications KEY FEATURES In depth practical demonstration of ML/DL concepts using Distributed Framework Covers graphical illustrations and visual explanations for ML/DL pipelines Includes live codebase for each of NLP computer vision and machine learning applications DESCRIPTION This book provides the reader with an up to date explanation of Machine Learning and an in depth comprehensive and straightforward understanding of the architectural techniques used to evaluate and anticipate the futuristic insights of data using Apache Spark The book walks readers by setting up Hadoop and Spark installations on premises Docker and AWS Readers will learn about Spark MLlib and how to utilize it in supervised and unsupervised machine learning scenarios With the help of Spark some of the most prominent technologies such as natural language processing and computer vision are evaluated and demonstrated in a realistic setting Using the capabilities of Apache Spark this book discusses the fundamental components that underlie each of these natural language processing computer vision and machine learning technologies as well as how you can incorporate these technologies into your business processes Towards the end of the book readers will learn about several deep learning frameworks such as TensorFlow and PyTorch Readers will also learn to execute distributed processing of deep learning problems using the Spark programming language WHAT YOU WILL LEARN Learn how to get started with machine learning projects using Spark Witness how to use Spark MLlib's design for machine learning and deep learning operations Use Spark in tasks involving NLP unsupervised learning and computer vision Experiment with Spark in a cloud environment and with AI pipeline workflows Run deep learning applications on a distributed network WHO THIS BOOK IS FOR This book is valuable for data engineers machine learning engineers data scientists data architects business analysts and technical consultants worldwide It would be beneficial to have some familiarity with the fundamentals of Hadoop and Python

Machine Learning with Spark and Python Michael Bowles, 2019-11-05 Machine Learning with Spark and Python Essential Techniques for Predictive Analytics Second Edition simplifies ML for practical uses by focusing on two key algorithms This new second edition improves with the addition of Spark a ML framework from the Apache foundation By implementing Spark machine learning students can easily process much large data sets and call the spark algorithms using ordinary Python code Machine Learning with Spark and Python focuses on two algorithm families linear methods and ensemble methods that effectively predict outcomes This type of problem covers many use cases such as what ad to place on a web page predicting prices in securities markets or detecting credit card fraud The focus on two families gives enough

room for full descriptions of the mechanisms at work in the algorithms Then the code examples serve to illustrate the workings of the machinery with specific hackable code

Apache Spark Machine Learning Cookbook Siamak Amirghodsi, 2016-10-31 Over 80 recipes to 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 bleeding edge applications such as self driving cars and personalized medicine You will gain hands on experience of applying these principles using Apache Spark a 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 It also highlights some key issues developers face while thinking about Scala for machine learning and during the switch over to Spark We progress by uncovering the various Spark APIs and the implementation of ML algorithms with developing classification systems recommendation engines clustering and learning systems Towards 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

Apache Spark 2.x Machine Learning Cookbook Siamak Amirghodsi, Meenakshi Rajendran, Broderick Hall, Shuen Mei, 2017-09-22 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

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Machine Learning With Spark Introduction

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