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1ST EDITION

Apache Spark for Machine Learning

Build and deploy high-performance big data AI solutions for large-scale clusters

DEEPAK GOWDA

Apache Spark Tutorial Machine Learning Article Datacamp

AW Rasmussen

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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 **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 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 FeaturesMake a hands on start in the fields of Big Data Distributed Technologies and Machine LearningLearn how to design develop and interpret the results of common Machine Learning algorithmsUncover hidden patterns in your data in order to derive real actionable insights and business valueBook 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 learnUnderstand how Spark fits in the context of the big data ecosystemUnderstand how to deploy and configure a local development environment using Apache SparkUnderstand how to design supervised and unsupervised learning modelsBuild models to perform NLP deep learning and cognitive services using Spark ML librariesDesign real time machine learning pipelines in Apache SparkBecome familiar with advanced techniques for processing a large volume of data by applying machine learning algorithmsWho 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 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 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 FeaturesExplore the world of distributed deep learning with Apache SparkTrain neural networks with deep learning libraries such as BigDL and TensorFlowDevelop Spark deep learning applications to intelligently handle large and complex datasetsBook 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 learnUnderstand the basics of deep learningSet up Apache Spark for deep learningUnderstand the principles of distribution modeling and different types of neural networksObtain an understanding of deep learning algorithmsDiscover textual analysis and deep learning with SparkUse popular deep learning frameworks such as Deeplearning4j TensorFlow and KerasExplore 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 *Beginning Apache Spark 2* Hien Luu,2018 Develop applications for the big data landscape with Spark and Hadoop This book also explains the role of Spark in developing scalable machine learning and analytics applications with Cloud technologies Beginning Apache Spark 2 gives you an introduction to Apache Spark and shows you how to work with it Along the way you ll discover resilient distributed datasets RDDs use Spark SQL for structured data and learn stream processing and build real time applications

with Spark Structured Streaming Furthermore you ll learn the fundamentals of Spark ML for machine learning and much more After you read this book you will have the fundamentals to become proficient in using Apache Spark and know when and how to apply it to your big data applications Hands-On Machine Learning Recommender Systems with Apache Spark Ernesto Lee,2020-04-17 *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

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 DescriptionIn 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 **Big Data Processing with Apache Spark** Srini Penchikala,2018-03-13 Apache Spark is a popular open source big data processing framework that s built around speed ease of use and unified distributed computing architecture Not only it supports developing applications in different languages like Java Scala Python and R it s also hundred times faster in memory and ten times faster even when running on disk compared to traditional data processing frameworks Whether you are currently working on a big data project or interested in learning more about topics like machine learning streaming data processing and graph data analytics this book is for you You can learn about Apache Spark and develop Spark programs for various use cases in big data analytics using the code examples provided This book covers all the libraries in Spark ecosystem Spark Core Spark SQL Spark Streaming Spark ML and Spark GraphX **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 **Apache Spark Machine Learning Blueprints** Alex Liu,2016-05-30 Develop a range of cutting edge machine learning

projects with Apache Spark using this actionable guide About This Book Customize Apache Spark and R to fit your analytical needs in customer research fraud detection risk analytics and recommendation engine development Develop a set of practical Machine Learning applications that can be implemented in real life projects A comprehensive project based guide to improve and refine your predictive models for practical implementation Who This Book Is For If you are a data scientist a data analyst or an R and SPSS user with a good understanding of machine learning concepts algorithms and techniques then this is the book for you Some basic understanding of Spark and its core elements and application is required What You Will Learn Set up Apache Spark for machine learning and discover its impressive processing power Combine Spark and R to unlock detailed business insights essential for decision making Build machine learning systems with Spark that can detect fraud and analyze financial risks Build predictive models focusing on customer scoring and service ranking Build a recommendation systems using SPSS on Apache Spark Tackle parallel computing and find out how it can support your machine learning projects Turn open data and communication data into actionable insights by making use of various forms of machine learning In Detail There s a reason why Apache Spark has become one of the most popular tools in Machine Learning its ability to handle huge datasets at an impressive speed means you can be much more responsive to the data at your disposal This book shows you Spark at its very best demonstrating how to connect it with R and unlock maximum value not only from the tool but also from your data Packed with a range of project blueprints that demonstrate some of the most interesting challenges that Spark can help you tackle you ll find out how to use Spark notebooks and access clean and join different datasets before putting your knowledge into practice with some real world projects in which you will see how Spark Machine Learning can help you with everything from fraud detection to analyzing customer attrition You ll also find out how to build a recommendation engine using Spark s parallel computing powers Style and approach This book offers a step by step approach to setting up Apache Spark and use other analytical tools with it to process Big Data and build machine learning projects The initial chapters focus more on the theory aspect of machine learning with Spark while each of the later chapters focuses on building standalone projects using Spark *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 xAbout 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 dataWho This Book Is ForIf 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 modelsIn DetailThis 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 approachThis 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

Frank Kane's Taming Big Data with Apache Spark and Python Frank Kane,2017-06-30 Frank Kane s hands on Spark training course based on his bestselling Taming Big Data with Apache Spark and Python video now available in a book Understand and analyze large data sets using Spark on a single system or on a cluster About This Book Understand how Spark can be distributed across computing clusters Develop and run Spark jobs efficiently using Python A hands on tutorial by Frank Kane with over 15 real world examples teaching you Big Data processing with Spark Who This Book Is For If you are a data scientist or data analyst who wants to learn Big Data processing using Apache Spark and Python this book is for you If you have some programming experience in Python and want to learn how to process large amounts of data using Apache Spark Frank Kane s Taming Big Data with Apache Spark and Python will also help you What You Will Learn Find out how you can identify Big Data problems as Spark problems Install and run Apache Spark on your computer or on a cluster Analyze large data sets across many CPUs using Spark s Resilient Distributed Datasets Implement machine learning on Spark using the MLlib library Process continuous streams of data in real time using the Spark streaming module Perform complex network analysis using Spark s GraphX library Use Amazon s Elastic MapReduce service to run your Spark jobs on a cluster In Detail Frank Kane s Taming Big Data with Apache Spark and Python is your companion to learning Apache Spark in a hands on manner Frank will start you off by teaching you how to set up Spark on a single system or on a cluster and you ll soon move on to analyzing large data sets using Spark RDD and developing and running effective Spark jobs quickly using Python Apache Spark has emerged as the next big thing in the Big Data domain quickly rising from an ascending technology to an established superstar in just a matter of years Spark allows you to quickly extract actionable insights from large amounts of data on a real time basis making it an essential tool in many modern businesses Frank has packed this book with

over 15 interactive fun filled examples relevant to the real world and he will empower you to understand the Spark ecosystem and implement production grade real time Spark projects with ease Style and approach Frank Kane s Taming Big Data with Apache Spark and Python is a hands on tutorial with over 15 real world examples carefully explained by Frank in a step by step manner The examples vary in complexity and you can move through them at your own pace Practical Data Science with Hadoop and Spark Ofer Mendelevitch,Casey Stella,Douglas Eadline,2016-12-08 The Complete Guide to Data Science with Hadoop For Technical Professionals Businesspeople and Students Demand is soaring for professionals who can solve real data science problems with Hadoop and Spark Practical Data Science with Hadoop and Spark is your complete guide to doing just that Drawing on immense experience with Hadoop and big data three leading experts bring together everything you need high level concepts deep dive techniques real world use cases practical applications and hands on tutorials The authors introduce the essentials of data science and the modern Hadoop ecosystem explaining how Hadoop and Spark have evolved into an effective platform for solving data science problems at scale In addition to comprehensive application coverage the authors also provide useful guidance on the important steps of data ingestion data munging and visualization Once the groundwork is in place the authors focus on specific applications including machine learning predictive modeling for sentiment analysis clustering for document analysis anomaly detection and natural language processing NLP This guide provides a strong technical foundation for those who want to do practical data science and also presents business driven guidance on how to apply Hadoop and Spark to optimize ROI of data science initiatives Learn What data science is how it has evolved and how to plan a data science career How data volume variety and velocity shape data science use cases Hadoop and its ecosystem including HDFS MapReduce YARN and Spark Data importation with Hive and Spark Data quality preprocessing preparation and modeling Visualization surfacing insights from huge data sets Machine learning classification regression clustering and anomaly detection Algorithms and Hadoop tools for predictive modeling Cluster analysis and similarity functions Large scale anomaly detection NLP applying data science to human language

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 **Mastering Machine Learning on AWS** Dr. Saket S.R. Mengle,Maximo Gurmendez,2019-05-20 Gain expertise in ML techniques with AWS to create interactive apps using SageMaker Apache Spark and TensorFlow Key FeaturesBuild machine learning apps on Amazon Web Services AWS using SageMaker Apache Spark and TensorFlowLearn model optimization and understand how to scale your models using simple and secure APIsDevelop train tune and deploy neural network models to accelerate model performance in the cloudBook Description AWS is constantly driving new innovations that empower data scientists to explore a variety of machine learning ML cloud services This book is your comprehensive reference for learning and implementing advanced ML algorithms in AWS cloud As you go through the chapters you ll gain insights into how these algorithms can be trained tuned and deployed in AWS using Apache Spark on Elastic Map Reduce EMR SageMaker and TensorFlow While you focus on algorithms such as XGBoost linear models factorization machines and deep nets the book will also provide you with an overview of AWS as well as detailed practical applications that will help you solve real world problems Every practical application includes a series of companion notebooks with all the necessary code to run on AWS In the next few chapters you will learn to use SageMaker and EMR Notebooks to perform a range of tasks right from smart analytics and predictive modeling through to sentiment analysis By the end of this book you will be equipped with the skills you need to effectively handle machine learning projects and implement and evaluate algorithms on AWS What you will learnManage AI workflows by using AWS cloud to deploy services that feed smart data productsUse SageMaker services to create recommendation modelsScale model training and deployment using Apache Spark on EMRUnderstand how to cluster big data through EMR and seamlessly integrate it with SageMakerBuild deep learning models on AWS using TensorFlow and deploy them as servicesEnhance your apps by combining Apache Spark and Amazon SageMakerWho this book is for This book is for data scientists machine learning developers deep learning enthusiasts and AWS users who want to build advanced models and smart applications on the cloud using AWS and its integration services Some understanding of machine learning concepts Python programming and AWS will be beneficial **Big Data Processing Using Spark in Cloud** Mamta Mittal,Valentina E. Balas,Lalit Mohan Goyal,Raghvendra Kumar,2018-06-16 The book describes the emergence of big data technologies and the role of Spark in the entire big data stack It compares Spark and Hadoop and identifies the shortcomings of Hadoop that have been overcome by Spark The book mainly focuses on the in depth architecture of Spark and our understanding of Spark RDDs and how RDD complements big data s immutable nature and solves it with lazy evaluation cacheable and type inference It also addresses advanced topics in Spark starting with the basics of Scala and the core Spark framework and exploring Spark data frames machine learning using Mllib graph analytics using Graph X and real time processing with Apache Kafka AWS Kenisis and Azure Event Hub It then goes on to investigate Spark using PySpark and R Focusing on the

current big data stack the book examines the interaction with current big data tools with Spark being the core processing layer for all types of data The book is intended for data engineers and scientists working on massive datasets and big data technologies in the cloud In addition to industry professionals it is helpful for aspiring data processing professionals and students working in big data processing and cloud computing environments **Advanced Analytics with Spark** Sandy Ryza,Uri Laserson,Sean Owen,Josh Wills,2017-06-12 In the second edition of this practical book four Cloudera data scientists present a set of self contained patterns for performing large scale data analysis with Spark The authors bring Spark statistical methods and real world data sets together to teach you how to approach analytics problems by example Updated for Spark 2 1 this edition acts as an introduction to these techniques and other best practices in Spark programming You ll start with an introduction to Spark and its ecosystem and then dive into patterns that apply common techniques including classification clustering collaborative filtering and anomaly detection to fields such as genomics security and finance If you have an entry level understanding of machine learning and statistics and you program in Java Python or Scala you ll find the book s patterns useful for working on your own data applications With this book you will Familiarize yourself with the Spark programming model Become comfortable within the Spark ecosystem Learn general approaches in data science Examine complete implementations that analyze large public data sets Discover which machine learning tools make sense for particular problems Acquire code that can be adapted to many uses *Apache Spark Quick Start Guide* Shrey Mehrotra,Akash Grade,2019-01-31 A practical guide for solving complex data processing challenges by applying the best optimizations techniques in Apache Spark Key FeaturesLearn about the core concepts and the latest developments in Apache SparkMaster writing efficient big data applications with Spark s built in modules for SQL Streaming Machine Learning and Graph analysisGet introduced to a variety of optimizations based on the actual experienceBook Description Apache Spark is a flexible framework that allows processing of batch and real time data Its unified engine has made it quite popular for big data use cases This book will help you to get started with Apache Spark 2 0 and write big data applications for a variety of use cases It will also introduce you to Apache Spark one of the most popular Big Data processing frameworks Although this book is intended to help you get started with Apache Spark but it also focuses on explaining the core concepts This practical guide provides a quick start to the Spark 2 0 architecture and its components It teaches you how to set up Spark on your local machine As we move ahead you will be introduced to resilient distributed datasets RDDs and DataFrame APIs and their corresponding transformations and actions Then we move on to the life cycle of a Spark application and learn about the techniques used to debug slow running applications You will also go through Spark s built in modules for SQL streaming machine learning and graph analysis Finally the book will lay out the best practices and optimization techniques that are key for writing efficient Spark applications By the end of this book you will have a sound fundamental understanding of the Apache Spark framework and you will be able to write and optimize Spark applications What you will learnLearn core

concepts such as RDDs DataFrames transformations and moreSet up a Spark development environmentChoose the right APIs for your applicationsUnderstand Spark s architecture and the execution flow of a Spark applicationExplore built in modules for SQL streaming ML and graph analysisOptimize your Spark job for better performanceWho this book is for If you are a big data enthusiast and love processing huge amount of data this book is for you If you are data engineer and looking for the best optimization techniques for your Spark applications then you will find this book helpful This book also helps data scientists who want to implement their machine learning algorithms in Spark You need to have a basic understanding of any one of the programming languages such as Scala Python or Java

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