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Dipartimento di Ingegneria Civile e Ingegneria Informatica

Apache Spark: Hands-on Session

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Apache Spark Hands On Session Uniroma2

Md. Rezaul Karim, Sridhar Alla



Apache Spark Hands On Session Uniroma2:

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 **Practical Apache Spark** Subhashini Chellappan, Dharanitharan Ganesan, 2018-12-12 Work with Apache Spark using Scala to deploy and set up single node multi node and high availability clusters This book discusses various components of Spark such as Spark Core DataFrames Datasets and SQL Spark Streaming Spark MLib and R on Spark with the help of practical code snippets for each topic Practical Apache Spark also covers the integration of Apache Spark with Kafka with examples You ll follow a learn to do by yourself approach to learning learn the concepts practice the code snippets in Scala and complete the assignments given to get an overall exposure On completion you ll have knowledge of the functional programming aspects of Scala and hands on expertise in various Spark components You ll also become familiar with machine learning algorithms with real time usage What You Will Learn Discover the functional programming features of Scala Understand the complete architecture of Spark and its components Integrate Apache Spark with Hive and Kafka Use Spark SQL DataFrames and Datasets to process data using traditional SQL queries Work with different machine learning concepts and libraries using Spark s MLLib packages

Who This Book Is For Developers and professionals who deal with batch and stream data processing 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 **Apache Spark 2: Data Processing and Real-Time Analytics** Romeo Kienzler, Md. Rezaul Karim, Sridhar Alla, Siamak Amirghodsi, Meenakshi Rajendran, Broderick Hall, Shuen Mei, 2018-12-21 Build efficient data flow and machine learning programs with this flexible multi functional open source cluster computing framework Key Features Master the art of real time big data processing and machine learning Explore a wide range of use cases to analyze large data Discover ways to optimize your work by using many features of Spark 2 x and Scala Book Description Apache Spark is an in memory cluster based data processing system that provides a wide range of functionalities such as big data

processing analytics machine learning and more With this Learning Path you can take your knowledge of Apache Spark to the next level by learning how to expand Spark s functionality and building your own data flow and machine learning programs on this platform You will work with the different modules in Apache Spark such as interactive querying with Spark SQL using DataFrames and datasets implementing streaming analytics with Spark Streaming and applying machine learning and deep learning techniques on Spark using MLlib and various external tools By the end of this elaborately designed Learning Path you will have all the knowledge you need to master Apache Spark and build your own big data processing and analytics pipeline quickly and without any hassle This Learning Path includes content from the following Packt products Mastering Apache Spark 2 x by Romeo Kienzler Scala and Spark for Big Data Analytics by Md Rezaul Karim Sridhar Alla Apache Spark 2 x Machine Learning Cookbook by Siamak Amirghodsi Meenakshi Rajendran Broderick Hall Shuen Mei Cookbook What you will learn Get to grips with all the features of Apache Spark 2 x Perform highly optimized real time big data processing Use ML and DL techniques with Spark MLlib and third party tools Analyze structured and unstructured data using Spark SQL and GraphX Understand tuning debugging and monitoring of big data applications Build scalable and fault tolerant streaming applications Develop scalable recommendation engines Who this book is for If you are an intermediate level Spark developer looking to master the advanced capabilities and use cases of Apache Spark 2 x this Learning Path is ideal for you Big data professionals who want to learn how to integrate and use the features of Apache Spark and build a strong big data pipeline will also find this Learning Path useful To grasp the concepts explained in this Learning Path you must know the fundamentals of Apache Spark and Scala

Modern Data Engineering with Apache Spark Scott Haines, 2022 Leverage Apache Spark within a modern data engineering ecosystem This hands on guide will teach you how to write fully functional applications follow industry best practices and learn the rationale behind these decisions With Apache Spark as the foundation you will follow a step by step journey beginning with the basics of data ingestion processing and transformation and ending up with an entire local data platform running Apache Spark Apache Zeppelin Apache Kafka Redis MySQL Minio S3 and Apache Airflow Apache Spark applications solve a wide range of data problems from traditional data loading and processing to rich SQL based analysis as well as complex machine learning workloads and even near real time processing of streaming data Spark fits well as a central foundation for any data engineering workload This book will teach you to write interactive Spark applications using Apache Zeppelin notebooks write and compile reusable applications and modules and fully test both batch and streaming You will also learn to containerize your applications using Docker and run and deploy your Spark applications using a variety of tools such as Apache Airflow Docker and Kubernetes Reading this book will empower you to take advantage of Apache Spark to optimize your data pipelines and teach you to craft modular and testable Spark applications You will create and deploy mission critical streaming spark applications in a low stress environment that paves the way for your own path to production What You Will Learn Simplify data transformation with

Spark Pipelines and Spark SQL Bridge data engineering with machine learning Architect modular data pipeline applications Build reusable application components and libraries Containerize your Spark applications for consistency and reliability Use Docker and Kubernetes to deploy your Spark applications Speed up application experimentation using Apache Zeppelin and Docker Understand serializable structured data and data contracts Harness effective strategies for optimizing data in your data lakes Build end to end Spark structured streaming applications using Redis and Apache Kafka Embrace testing for your batch and streaming applications Deploy and monitor your Spark applications

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 *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 [Taming Big Data with Apache Spark and Python--Hands On!](#) Frank Kane, 2016 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 This course will be your companion to learn Apache Spark in a hands on manner Start with understanding how to set up Spark on a single system or on a cluster From analyzing large data sets using Spark RDD to developing and running effective Spark jobs quickly using Python this course will teach you everything Packed with over 15 interactive fun filled examples relevant to the real world the course will empower you to understand the Spark ecosystem and implement production grade real time Spark projects with ease Resource description page [Learning](#)

Spark SQL Aurobindo Sarkar,2017-09-07 Design implement and deliver successful streaming applications machine learning pipelines and graph applications using Spark SQL API About This Book Learn about the design and implementation of streaming applications machine learning pipelines deep learning and large scale graph processing applications using Spark SQL APIs and Scala Learn data exploration data munging and how to process structured and semi structured data using real world datasets and gain hands on exposure to the issues and challenges of working with noisy and dirty real world data Understand design considerations for scalability and performance in web scale Spark application architectures Who This Book Is For If you are a developer engineer or an architect and want to learn how to use Apache Spark in a web scale project then this is the book for you It is assumed that you have prior knowledge of SQL querying A basic programming knowledge with Scala Java R or Python is all you need to get started with this book What You Will Learn Familiarize yourself with Spark SQL programming including working with DataFrame Dataset API and SQL Perform a series of hands on exercises with different types of data sources including CSV JSON Avro MySQL and MongoDB Perform data quality checks data visualization and basic statistical analysis tasks Perform data munging tasks on publically available datasets Learn how to use Spark SQL and Apache Kafka to build streaming applications Learn key performance tuning tips and tricks in Spark SQL applications Learn key architectural components and patterns in large scale Spark SQL applications In Detail In the past year Apache Spark has been increasingly adopted for the development of distributed applications Spark SQL APIs provide an optimized interface that helps developers build such applications quickly and easily However designing web scale production applications using Spark SQL APIs can be a complex task Hence understanding the design and implementation best practices before you start your project will help you avoid these problems This book gives an insight into the engineering practices used to design and build real world Spark based applications The book s hands on examples will give you the required confidence to work on any future projects you encounter in Spark SQL It starts by familiarizing you with data exploration and data munging tasks using Spark SQL and Scala Extensive code examples will help you understand the methods used to implement typical use cases for various types of applications You will get a walkthrough of the key concepts and terms that are common to streaming machine learning and graph applications You will also learn key performance tuning details including Cost Based Optimization Spark 2 2 in Spark SQL applications Finally you will move on to learning how such systems are architected and deployed for a successful delivery of your project Style and approach This book is a hands on guide to designing building and deploying Spark SQL centric production applications at scale **Learning Real Time Processing with Spark Streaming** Sumit Gupta,2015-09-28 Building scalable and fault tolerant streaming applications made easy with Spark streamingAbout This Book Process live data streams more efficiently with better fault recovery using Spark Streaming Implement and deploy real time log file analysis Learn about integration with Advance Spark Libraries GraphX Spark SQL and MLib Who This Book Is ForThis book is intended for big data developers with basic knowledge of

Scala but no knowledge of Spark It will help you grasp the basics of developing real time applications with Spark and understand efficient programming of core elements and applications What You Will Learn Install and configure Spark and Spark Streaming to execute applications Explore the architecture and components of Spark and Spark Streaming to use it as a base for other libraries Process distributed log files in real time to load data from distributed sources Apply transformations on streaming data to use its functions Integrate Apache Spark with the various advance libraries like MLib and GraphX Apply production deployment scenarios to deploy your applicationIn DetailUsing practical examples with easy to follow steps this book will teach you how to build real time applications with Spark Streaming Starting with installing and setting the required environment you will write and execute your first program for Spark Streaming This will be followed by exploring the architecture and components of Spark Streaming along with an overview of libraries functions exposed by Spark Next you will be taught about various client APIs for coding in Spark by using the use case of distributed log file processing You will then apply various functions to transform and enrich streaming data Next you will learn how to cache and persist datasets Moving on you will integrate Apache Spark with various other libraries components of Spark like Mlib GraphX and Spark SQL Finally you will learn about deploying your application and cover the different scenarios ranging from standalone mode to distributed mode using Mesos Yarn and private data centers or on cloud infrastructure Style and approachA Step by Step approach to learn Spark Streaming in a structured manner with detailed explanation of basic and advance features in an easy to follow Style Each topic is explained sequentially and supported with real world examples and executable code snippets that appeal to the needs of readers with the wide range of experiences [Apache Spark for Data Science Cookbook](#) Padma Priya Chitturi,2016-12-22 Over insightful 90 recipes to get lightning fast analytics with Apache Spark About This Book Use Apache Spark for data processing with these hands on recipes Implement end to end large scale data analysis better than ever before Work with powerful libraries such as MLLib SciPy NumPy and Pandas to gain insights from your data Who This Book Is For This book is for novice and intermediate level data science professionals and data analysts who want to solve data science problems with a distributed computing framework Basic experience with data science implementation tasks is expected Data science professionals looking to skill up and gain an edge in the field will find this book helpful What You Will Learn Explore the topics of data mining text mining Natural Language Processing information retrieval and machine learning Solve real world analytical problems with large data sets Address data science challenges with analytical tools on a distributed system like Spark apt for iterative algorithms which offers in memory processing and more flexibility for data analysis at scale Get hands on experience with algorithms like Classification regression and recommendation on real datasets using Spark MLLib package Learn about numerical and scientific computing using NumPy and SciPy on Spark Use Predictive Model Markup Language PMML in Spark for statistical data mining models In Detail Spark has emerged as the most promising big data analytics engine for data science professionals The true power and value of Apache Spark lies in its ability

to execute data science tasks with speed and accuracy Spark's selling point is that it combines ETL batch analytics real time stream analysis machine learning graph processing and visualizations It lets you tackle the complexities that come with raw unstructured data sets with ease This guide will get you comfortable and confident performing data science tasks with Spark You will learn about implementations including distributed deep learning numerical computing and scalable machine learning You will be shown effective solutions to problematic concepts in data science using Spark's data science libraries such as MLlib Pandas NumPy SciPy and more These simple and efficient recipes will show you how to implement algorithms and optimize your work Style and approach This book contains a comprehensive range of recipes designed to help you learn the fundamentals and tackle the difficulties of data science This book outlines practical steps to produce powerful insights into Big Data through a recipe based approach *Hands-on Guide to Apache Spark 3* Alfonso Antolínez García,2023-09-17 This book explains how to scale Apache Spark 3 to handle massive amounts of data either via batch or streaming processing It covers how to use Spark's structured APIs to perform complex data transformations and analyses you can use to implement end to end analytics workflows This book covers Spark 3's new features theoretical foundations and application architecture The first section introduces the Apache Spark ecosystem as a unified engine for large scale data analytics and shows you how to run and fine tune your first application in Spark The second section centers on batch processing suited to end of cycle processing and data ingestion through files and databases It explains Spark DataFrame API as well as structured and unstructured data with Apache Spark The last section deals with scalable high throughput fault tolerant streaming processing workloads to process real time data Here you'll learn about Apache Spark Streaming's execution model the architecture of Spark Streaming monitoring reporting and recovering Spark streaming A full chapter is devoted to future directions for Spark Streaming With real world use cases code snippets and notebooks hosted on GitHub this book will give you an understanding of large scale data analysis concepts and help you put them to use Upon completing this book you will have the knowledge and skills to seamlessly implement large scale batch and streaming workloads to analyze real time data streams with Apache Spark What You Will Learn Master the concepts of Spark clusters and batch data processing Understand data ingestion transformation and data storage Gain insight into essential stream processing concepts and different streaming architectures Implement streaming jobs and applications with Spark Streaming Who This Book Is For Data engineers data analysts machine learning engineers Python and R programmers **Scala and Spark for Big Data Analytics** Md. Rezaul Karim,Sridhar Alla,2017-07-25 Harness the power of Scala to program Spark and analyze tonnes of data in the blink of an eye About This Book Learn Scala's sophisticated type system that combines Functional Programming and object oriented concepts Work on a wide array of applications from simple batch jobs to stream processing and machine learning Explore the most common as well as some complex use cases to perform large scale data analysis with Spark Who This Book Is For Anyone who wishes to learn how to perform data analysis by harnessing the power of Spark will find this

book extremely useful No knowledge of Spark or Scala is assumed although prior programming experience especially with other JVM languages will be useful to pick up concepts quicker What You Will Learn Understand object oriented functional programming concepts of Scala In depth understanding of Scala collection APIs Work with RDD and DataFrame to learn Spark s core abstractions Analysing structured and unstructured data using SparkSQL and GraphX Scalable and fault tolerant streaming application development using Spark structured streaming Learn machine learning best practices for classification regression dimensionality reduction and recommendation system to build predictive models with widely used algorithms in Spark MLlib ML Build clustering models to cluster a vast amount of data Understand tuning debugging and monitoring Spark applications Deploy Spark applications on real clusters in Standalone Mesos and YARN In Detail Scala has been observing wide adoption over the past few years especially in the field of data science and analytics Spark built on Scala has gained a lot of recognition and is being used widely in productions Thus if you want to leverage the power of Scala and Spark to make sense of big data this book is for you The first part introduces you to Scala helping you understand the object oriented and functional programming concepts needed for Spark application development It then moves on to Spark to cover the basic abstractions using RDD and DataFrame This will help you develop scalable and fault tolerant streaming applications by analyzing structured and unstructured data using SparkSQL GraphX and Spark structured streaming Finally the book moves on to some advanced topics such as monitoring configuration debugging testing and deployment You will also learn how to develop Spark applications using SparkR and PySpark APIs interactive data analytics using Zeppelin and in memory data processing with Alluxio By the end of this book you will have a thorough understanding of Spark and you will be able to perform full stack data analytics with a feel that no amount of data is too big Style and approach Filled with practical examples and use cases this book will not only help you get up and running with Spark but will also take you farther down the road to becoming a data scientist *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

PySpark Cookbook Denny Lee, Tomasz Drabas, 2018-06-29 Combine the power of Apache Spark and Python to build effective big data applications Key Features Perform effective data processing machine learning and analytics using PySpark Overcome challenges in developing and deploying Spark solutions using Python Explore recipes for efficiently combining Python and Apache Spark to process data Book Description Apache Spark is an open source framework for efficient cluster computing with a strong interface for data parallelism and fault tolerance The PySpark Cookbook presents effective and time saving recipes for leveraging the power of Python and putting it to use in the Spark ecosystem You'll start by learning the Apache Spark architecture and how to set up a Python environment for Spark You'll then get familiar with the modules available in PySpark and start using them effortlessly In addition to this you'll discover how to abstract data with RDDs and DataFrames and understand the streaming capabilities of PySpark You'll then move on to using ML and MLlib in order to solve any problems related to the machine learning capabilities of PySpark and use GraphFrames to solve graph processing problems Finally you will explore how to deploy your applications to the cloud using the spark submit command By the end of this book you will be able to use the Python API for Apache Spark to solve any problems associated with building data intensive applications What you will learn Configure a local instance of PySpark in a virtual environment Install and configure Jupyter in local and multi node environments Create DataFrames from JSON and a dictionary using pyspark sql Explore regression and clustering models available in the ML module Use DataFrames to transform data used for modeling Connect to PubNub and perform aggregations on streams Who this book is for The PySpark Cookbook is for you if you are a Python developer looking for hands on recipes for using the Apache Spark 2.x ecosystem in the best possible way A thorough understanding of Python and some familiarity with Spark will help you get the best out of the book

Apache Spark Machine Learning Cookbook Siamak

Amirghodsi,2016-10-31 Over 80 recipes to simplify machine learning model implementations with SparkAbout 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 dataWho This Book Is ForThis 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 SparkIn DetailMachine 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 with Scala James Lee,2018 This course covers all the fundamentals of Apache Spark with Scala and teaches you everything you need to know about developing Spark applications with Scala At the end of this course you will gain in depth knowledge about Apache Spark and general big data analysis and manipulations skills to help your company to adapt Apache Spark for building a big data processing pipeline and data analytics applications This course covers 10 hands on big data examples You will learn valuable knowledge about how to frame data analysis problems as Spark problems Together we will learn examples such as aggregating NASA Apache web logs from different sources we will explore the price trend by looking at the real estate data in California we will write Spark applications to find out the median salary of developers in different countries through the Stack Overflow survey data we will develop a system to analyze how maker spaces are distributed across different regions in the United Kingdom and much much more This course is taught in Scala Scala is the next generation programming language for functional programming

that is growing in popularity and it is one of the most widely used languages in the industry to write Spark programs Let's learn how to write Spark programs with Scala to model big data problems today Resource description page **Apache Spark 2** Romeo Kienzler,Rezaul Karim,Sridhar Alla,2018-12-18 Build efficient data flow and machine learning programs with this flexible multi functional open source cluster computing framework Key Features Master the art of real time big data processing and machine learning Explore a wide range of use cases to analyze large data Discover ways to optimize your work by using many features of Spark 2 x and Scala Book Description Apache Spark is an in memory cluster based data processing system that provides a wide range of functionalities such as big data processing analytics machine learning and more With this Learning Path you can take your knowledge of Apache Spark to the next level by learning how to expand Spark's functionality and building your own data flow and machine learning programs on this platform You will work with the different modules in Apache Spark such as interactive querying with Spark SQL using DataFrames and datasets implementing streaming analytics with Spark Streaming and applying machine learning and deep learning techniques on Spark using MLlib and various external tools By the end of this elaborately designed Learning Path you will have all the knowledge you need to master Apache Spark and build your own big data processing and analytics pipeline quickly and without any hassle This Learning Path includes content from the following Packt products Mastering Apache Spark 2 x by Romeo Kienzler Scala and Spark for Big Data Analytics by Md Rezaul Karim Sridhar Alla Apache Spark 2 x Machine Learning Cookbook by Siamak Amirghodsi Meenakshi Rajendran Broderick Hall Shuen Mei Cookbook What you will learn Get to grips with all the features of Apache Spark 2 x Perform highly optimized real time big data processing Use ML and DL techniques with Spark MLlib and third party tools Analyze structured and unstructured data using SparkSQL and GraphX Understand tuning debugging and monitoring of big data applications Build scalable and fault tolerant streaming applications Develop scalable recommendation engines Who this book is for If you are an intermediate level Spark developer looking to master the advanced capabilities and use cases of Apache Spark 2 x this Learning Path is ideal for you Big data professionals who want to learn how to integrate and use the features of Apache Spark and build a strong big data pipeline will also find this Learning Path useful To grasp the concepts explained in this Learning Path you must know the fundamentals of Apache Spark and Scala *Hands-On Machine Learning Recommender Systems with Apache Spark* Ernesto Lee,2020-04-17

Taming Big Data with Spark Streaming and Scala--Hands On! Frank Kane,2016 Apache Spark has emerged as the most popular tool in the Big Data market for efficient real time analytics of Big Data Spanning over 5 hours this course will teach you the basics of Apache Spark and how to use Spark Streaming a module of Apache Spark which involves handling and processing of Big Data on a real time basis You will learn how to create Spark applications with Scala to process streams of real time data Whether you want to analyze continuously incoming website traffic analyze real time streams of Twitter feeds or query your streaming data in real time this course has got you covered You will also learn how to use the MLlib module of

Spark to train machine learning models with streaming data and use those models to make real time predictions The course assumes some programming experience and uses Scala to develop Spark applications It includes a crash course in the Scala programming language in case you re new to it [Resource description page](#)

Immerse yourself in heartwarming tales of love and emotion with Crafted by is touching creation, **Apache Spark Hands On Session Uniroma2** . This emotionally charged ebook, available for download in a PDF format (PDF Size: *), is a celebration of love in all its forms. Download now and let the warmth of these stories envelop your heart.

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