MACHINE LEARNING WITH SCALA

ANDY PETRELLA
DATA FELLAS

SUSAN ERALY
SKYMIND

Scala For Machine Learning

Md. Rezaul Karim

Scala For Machine Learning:

Scala Machine Learning Projects Md. Rezaul Karim,2018-01-31 Powerful smart applications using deep learning algorithms to dominate numerical computing deep learning and functional programming Key Features Explore machine learning techniques with prominent open source Scala libraries such as Spark ML H2O MXNet Zeppelin and DeepLearning4j Solve real world machine learning problems by delving complex numerical computing with Scala functional programming in a scalable and faster way Cover all key aspects such as collection storing processing analyzing and evaluation required to build and deploy machine models on computing clusters using Scala Play framework Book Description Machine learning has had a huge impact on academia and industry by turning data into actionable information Scala has seen a steady rise in adoption over the past few years especially in the fields of data science and analytics This book is for data scientists data engineers and deep learning enthusiasts who have a background in complex numerical computing and want to know more hands on machine learning application development If you re well versed in machine learning concepts and want to expand your knowledge by delving into the practical implementation of these concepts using the power of Scala then this book is what you need Through 11 end to end projects you will be acquainted with popular machine learning libraries such as Spark ML H2O DeepLearning4j and MXNet At the end you will be able to use numerical computing and functional programming to carry out complex numerical tasks to develop build and deploy research or commercial projects in a production ready environment What you will learn Apply advanced regression techniques to boost the performance of predictive models Use different classification algorithms for business analytics Generate trading strategies for Bitcoin and stock trading using ensemble techniques Train Deep Neural Networks DNN using H2O and Spark ML Utilize NLP to build scalable machine learning models Learn how to apply reinforcement learning algorithms such as Q learning for developing ML application Learn how to use autoencoders to develop a fraud detection application Implement LSTM and CNN models using DeepLearning4j and MXNet Who this book is for If you want to leverage the power of both Scala and Spark to make sense of Big Data then this book is for you If you are well versed with machine learning concepts and wants to expand your knowledge by delving into the practical implementation using the power of Scala then this book is what you need Strong understanding of Scala Programming language is recommended Basic familiarity with machine Learning techniques will be more helpful

Scala for Machine Learning Patrick R. Nicolas,2015-12-18 Are you curious about AI All you need is a good understanding of the Scala programming language a basic knowledge of statistics a keen interest in Big Data processing and this book Machine Learning with Scala Quick Start Guide Md. Rezaul Karim,2019-04-30 Supervised and unsupervised machine learning made easy in Scala with this quick start guide Key FeaturesConstruct and deploy machine learning systems that learn from your data and give accurate predictionsUnleash the power of Spark ML along with popular machine learning algorithms to solve complex tasks in Scala Solve hands on problems by combining popular neural network architectures such

as LSTM and CNN using Scala with DeepLearning4j libraryBook Description Scala is a highly scalable integration of object oriented nature and functional programming concepts that make it easy to build scalable and complex big data applications This book is a handy guide for machine learning developers and data scientists who want to develop and train effective machine learning models in Scala The book starts with an introduction to machine learning while covering deep learning and machine learning basics It then explains how to use Scala based ML libraries to solve classification and regression problems using linear regression generalized linear regression logistic regression support vector machine and Na ve Bayes algorithms It also covers tree based ensemble techniques for solving both classification and regression problems Moving ahead it covers unsupervised learning techniques such as dimensionality reduction clustering and recommender systems Finally it provides a brief overview of deep learning using a real life example in Scala What you will learnGet acquainted with JVM based machine learning libraries for Scala such as Spark ML and Deeplearning4jLearn RDDs DataFrame and Spark SQL for analyzing structured and unstructured dataUnderstand supervised and unsupervised learning techniques with best practices and pitfallsLearn classification and regression analysis with linear regression logistic regression Na ve Bayes support vector machine and tree based ensemble techniques Learn effective ways of clustering analysis with dimensionality reduction techniquesLearn recommender systems with collaborative filtering approachDelve into deep learning and neural network architecturesWho this book is for This book is for machine learning developers looking to train machine learning models in Scala without spending too much time and effort Some fundamental knowledge of Scala programming and some basics of statistics and linear algebra is all you need to get started with this book *Scala for Machine Learning, Second Edition* Patrick R. Nicolas,2017-09-26 Leverage Scala and Machine Learning to study and construct systems that can learn from dataAbout This Book Explore a broad variety of data processing machine learning and genetic algorithms through diagrams mathematical formulation and updated source code in Scala Take your expertise in Scala programming to the next level by creating and customizing AI applications Experiment with different techniques and evaluate their benefits and limitations using real world applications in a tutorial styleWho This Book Is ForIf you re a data scientist or a data analyst with a fundamental knowledge of Scala who wants to learn and implement various Machine learning techniques this book is for you All you need is a good understanding of the Scala programming language a basic knowledge of statistics a keen interest in Big Data processing and this book What You Will Learn Build dynamic workflows for scientific computing Leverage open source libraries to extract patterns from time series Write your own classification clustering or evolutionary algorithm Perform relative performance tuning and evaluation of Spark Master probabilistic models for sequential data Experiment with advanced techniques such as regularization and kernelization Dive into neural networks and some deep learning architecture Apply some basic multiarm bandit algorithms Solve big data problems with Scala parallel collections Akka actors and Apache Spark clusters Apply key learning strategies to a technical analysis of financial marketsIn DetailThe

discovery of information through data clustering and classification is becoming a key differentiator for competitive organizations Machine learning applications are everywhere from self driving cars engineering design logistics manufacturing and trading strategies to detection of genetic anomalies The book is your one stop guide that introduces you to the functional capabilities of the Scala programming language that are critical to the creation of machine learning algorithms such as dependency injection and implicits You start by learning data preprocessing and filtering techniques Following this you ll move on to unsupervised learning techniques such as clustering and dimension reduction followed by probabilistic graphical models such as Naive Bayes hidden Markov models and Monte Carlo inference Further it covers the discriminative algorithms such as linear logistic regression with regularization kernelization support vector machines neural networks and deep learning You ll move on to evolutionary computing multibandit algorithms and reinforcement learning Finally the book includes a comprehensive overview of parallel computing in Scala and Akka followed by a description of Apache Spark and its ML library With updated codes based on the latest version of Scala and comprehensive examples this book will ensure that you have more than just a solid fundamental knowledge in machine learning with Scala Style and approachThis book is designed as a tutorial with hands on exercises using technical analysis of financial markets and corporate data The approach of each chapter is such that it allows you to understand key concepts easily Mastering Scala Machine Learning Alexander Kozlov,2016-06-29 Advance your skills in efficient data analysis and data processing using the powerful tools of Scala Spark and HadoopAbout This Book This is a primer on functional programming style techniques to help you efficiently process and analyze all of your data Get acquainted with the best and newest tools available such as Scala Spark Parquet and MLlib for machine learning Learn the best practices to incorporate new Big Data machine learning in your data driven enterprise to gain future scalability and maintainabilityWho This Book Is ForMastering Scala Machine Learning is intended for enthusiasts who want to plunge into the new pool of emerging techniques for machine learning Some familiarity with standard statistical techniques is required What You Will Learn Sharpen your functional programming skills in Scala using REPL Apply standard and advanced machine learning techniques using Scala Get acquainted with Big Data technologies and grasp why we need a functional approach to Big Data Discover new data structures algorithms approaches and habits that will allow you to work effectively with large amounts of data Understand the principles of supervised and unsupervised learning in machine learning Work with unstructured data and serialize it using Kryo Protobuf Avro and AvroParquet Construct reliable and robust data pipelines and manage data in a data driven enterprise Implement scalable model monitoring and alerts with ScalaIn DetailSince the advent of object oriented programming new technologies related to Big Data are constantly popping up on the market One such technology is Scala which is considered to be a successor to Java in the area of Big Data by many like Java was to C C in the area of distributed programing This book aims to take your knowledge to next level and help you impart that knowledge to build advanced applications such as social media

mining intelligent news portals and more After a quick refresher on functional programming concepts using REPL you will see some practical examples of setting up the development environment and tinkering with data We will then explore working with Spark and MLlib using k means and decision trees Most of the data that we produce today is unstructured and raw and you will learn to tackle this type of data with advanced topics such as regression classification integration and working with graph algorithms Finally you will discover at how to use Scala to perform complex concept analysis to monitor model performance and to build a model repository By the end of this book you will have gained expertise in performing Scala machine learning and will be able to build complex machine learning projects using Scala **Scala:Applied Machine Learning** Pascal Bugnion,Patrick R. Nicolas,Alex Kozlov,2017-02-23 Leverage the power of Scala and master the art of building improving and validating scalable machine learning and AI applications using Scala s most advanced and finest featuresAbout This Book Build functional type safe routines to interact with relational and NoSQL databases with the help of the tutorials and examples provided Leverage your expertise in Scala programming to create and customize your own scalable machine learning algorithms Experiment with different techniques evaluate their benefits and limitations using real world financial applications Get to know the best practices to incorporate new Big Data machine learning in your data driven enterprise and gain future scalability and maintainabilityWho This Book Is ForThis Learning Path is for engineers and scientists who are familiar with Scala and want to learn how to create validate and apply machine learning algorithms It will also benefit software developers with a background in Scala programming who want to apply machine learning What You Will Learn Create Scala web applications that couple with JavaScript libraries such as D3 to create compelling interactive visualizations Deploy scalable parallel applications using Apache Spark loading data from HDFS or Hive Solve big data problems with Scala parallel collections Akka actors and Apache Spark clusters Apply key learning strategies to perform technical analysis of financial markets Understand the principles of supervised and unsupervised learning in machine learning Work with unstructured data and serialize it using Kryo Protobuf Avro and AvroParquet Construct reliable and robust data pipelines and manage data in a data driven enterprise Implement scalable model monitoring and alerts with ScalaIn DetailThis Learning Path aims to put the entire world of machine learning with Scala in front of you Scala for Data Science the first module in this course is a tutorial guide that provides tutorials on some of the most common Scala libraries for data science allowing you to quickly get up to speed building data science and data engineering solutions The second course Scala for Machine Learning guides you through the process of building AI applications with diagrams formal mathematical notation source code snippets and useful tips A review of the Akka framework and Apache Spark clusters concludes the tutorial The next module Mastering Scala Machine Learning is the final step in this course It will take your knowledge to next level and help you use the knowledge to build advanced applications such as social media mining intelligent news portals and more After a quick refresher on functional programming concepts using REPL you will see some

practical examples of setting up the development environment and tinkering with data We will then explore working with Spark and MLlib using k means and decision trees By the end of this course you will be a master at Scala machine learning and have enough expertise to be able to build complex machine learning projects using Scala This Learning Path combines some of the best that Packt has to offer in one complete curated package It includes content from the following Packt products Scala for Data Science Pascal Bugnion Scala for Machine Learning Patrick Nicolas Mastering Scala Machine Learning Alex KozlovStyle and approachA tutorial with complete examples this course will give you the tools to start building useful data engineering and data science solutions straightaway This course provides practical examples from the field on how to correctly tackle data analysis problems particularly for modern Big Data datasets *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 hot only help you get up and running with Spark but will also take you farther down the road to becoming a data scientist **Scala: Guide for Data Science Professionals** Pascal Bugnion,Arun Manivannan,Patrick R. Nicolas,2017-02-24 Scala will be a valuable tool to have on hand during your data science journey for everything from data cleaning to cutting edge machine learning About This Book Build data science and data engineering solutions with ease An in depth look at each stage of the data analysis process from reading and collecting data to distributed analytics Explore a broad variety of data processing machine learning and genetic algorithms through diagrams mathematical formulations and source code Who This Book Is For This learning path is perfect for those who are comfortable with Scala programming and now want to enter the field of data science Some knowledge of statistics is expected What You Will Learn Transfer and filter tabular data to extract features for machine learning Read clean transform and write data to both SQL and NoSQL databases Create Scala web applications that couple with JavaScript libraries such as D3 to create compelling interactive visualizations Load data from HDFS and HIVE with ease Run streaming and graph analytics in Spark for exploratory analysis Bundle and scale up Spark jobs by deploying them into a variety of cluster managers Build dynamic workflows for scientific computing Leverage open source libraries to extract patterns from time series Master probabilistic models for sequential data In Detail Scala is especially good for analyzing large sets of data as the scale of the task doesn t have any significant impact on performance Scala s powerful functional libraries can interact with databases and build scalable frameworks resulting in the creation of robust data pipelines The first module introduces you to Scala libraries to ingest store manipulate process and visualize data Using real world examples you will learn how to design scalable architecture to process and model data starting from simple concurrency constructs and progressing to actor systems and Apache Spark After this you will also learn how to build interactive visualizations with web frameworks Once you have become familiar with all the tasks involved in data science you will explore data analytics with Scala in the second module You ll see how Scala can be used to make sense of data through easy to follow recipes You will learn about Bokeh bindings for exploratory data analysis and quintessential machine learning with algorithms with Spark ML library You ll get a sufficient understanding of Spark streaming machine learning for streaming data and Spark graphX Armed with a firm understanding of data analysis you will be ready to explore the most cutting edge aspect of data science machine learning The final module teaches you the A to Z of machine learning with Scala You ll explore Scala for dependency injections and implicits which are used to write machine learning algorithms You ll also explore machine learning topics such as clustering dimentionality reduction Naive Bayes Regression models SVMs neural networks and more This learning path combines some of the best that Packt has to offer into one complete curated package It includes content from the following Packt products Scala for Data Science Pascal Bugnion Scala Data Analysis Cookbook Arun Manivannan Scala for Machine Learning Patrick R

Nicolas Style and approach A complete package with all the information necessary to start building useful data engineering and data science solutions straight away It contains a diverse set of recipes that cover the full spectrum of interesting data analysis tasks and will help you revolutionize your data analysis skills using Scala **Scala** Pascal Bugnion,Patrick R. Nicolas,Alex Kozlov,2016 Leverage the power of Scala and master the art of building improving and validating scalable machine learning and AI applications using Scala s most advanced and finest features About This Book Build functional type safe routines to interact with relational and NoSQL databases with the help of the tutorials and examples provided Leverage your expertise in Scala programming to create and customize your own scalable machine learning algorithms Experiment with different techniques evaluate their benefits and limitations using real world financial applications Get to know the best practices to incorporate new Big Data machine learning in your data driven enterprise and gain future scalability and maintainability Who This Book Is For This Learning Path is for engineers and scientists who are familiar with Scala and want to learn how to create validate and apply machine learning algorithms It will also benefit software developers with a background in Scala programming who want to apply machine learning What You Will Learn Create Scala web applications that couple with JavaScript libraries such as D3 to create compelling interactive visualizations Deploy scalable parallel applications using Apache Spark loading data from HDFS or Hive Solve big data problems with Scala parallel collections Akka actors and Apache Spark clusters Apply key learning strategies to perform technical analysis of financial markets Understand the principles of supervised and unsupervised learning in machine learning Work with unstructured data and serialize it using Kryo Protobuf Avro and AvroParquet Construct reliable and robust data pipelines and manage data in a data driven enterprise Implement scalable model monitoring and alerts with Scala In Detail This Learning Path aims to put the entire world of machine learning with Scala in front of you Scala for Data Science the first module in this course is a tutorial guide that provides tutorials on some of the most common Scala libraries for data science allowing you to quickly get up to speed building data science and data engineering solutions The second course Scala for Machine Learning guides you through the process of building AI applications with diagrams formal mathematical notation source code snippets and useful tips A review of the Akka framework and Apache Spark clusters concludes the tutorial The next module Mastering Scala Machine Learning is the final step in this course It will take yo *Mastering Scala Machine Learning* Alex Kozlov,2016-06-28 Advance your skills in efficient data analysis and data processing using the powerful tools of Scala Spark and Hadoop About This Book This is a primer on functional programming style techniques to help you efficiently process and analyze all of your data Get acquainted with the best and newest tools available such as Scala Spark Parquet and MLlib for machine learning Learn the best practices to incorporate new Big Data machine learning in your data driven enterprise to gain future scalability and maintainability Who This Book Is For Mastering Scala Machine Learning is intended for enthusiasts who want to plunge into the new pool of emerging techniques for machine learning Some familiarity with

standard statistical techniques is required What You Will Learn Sharpen your functional programming skills in Scala using REPL Apply standard and advanced machine learning techniques using Scala Get acquainted with Big Data technologies and grasp why we need a functional approach to Big Data Discover new data structures algorithms approaches and habits that will allow you to work effectively with large amounts of data Understand the principles of supervised and unsupervised learning in machine learning Work with unstructured data and serialize it using Kryo Protobuf Avro and AvroParquet Construct reliable and robust data pipelines and manage data in a data driven enterprise Implement scalable model monitoring and alerts with Scala In Detail Since the advent of object oriented programming new technologies related to Big Data are constantly popping up on the market One such technology is Scala which is considered to be a successor to Java in the area of Big Data by many like Java was to C C in the area of distributed programing This book aims to take your knowledge to next level and help you impart that knowledge to build advanced applications such as social media mining intelligent news portals and more After a quick refresher on functional programming concepts using REPL you will see some practical examples of setting up the development environment and tinkering with data We will then explore working with Spark and MLlib using k means and decision trees Most of the data that we produce today is unstructured and raw and you will learn to tackle this type of data with advanced topics such as regression classification integration and working with graph algorithms Finally you will discover at how to use Scala to perform complex concept analysis to monitor model performance and to build a model repository By the end of this book you will have gained expertise in performing Scala machine learning and will be able to build complex machine learning projects using Scala Style and approach This hands on guide dives straight into implementing Scala for machine learning without delving much into mathematical proofs or validations There are ample code examples and tricks that will help you sail through using the standard techniques and libraries This book provides practical examples from the field on how to correctly tackle data analysis problems particularly for modern Big Data datasets **Scala: Guide for Data Science Professionals** Pascal Bugnion,2017 **Scala Data Analysis Cookbook** Arun Manivannan,2015-10-30 Navigate the world of data analysis visualization and machine learning with over 100 hands on Scala recipes About This Book Implement Scala in your data analysis using features from Spark Breeze and Zeppelin Scale up your data anlytics infrastructure with practical recipes for Scala machine learning Recipes for every stage of the data analysis process from reading and collecting data to distributed analytics Who This Book Is For This book shows data scientists and analysts how to leverage their existing knowledge of Scala for quality and scalable data analysis What You Will Learn Familiarize and set up the Breeze and Spark libraries and use data structures Import data from a host of possible sources and create dataframes from CSV Clean validate and transform data using Scala to pre process numerical and string data Integrate quintessential machine learning algorithms using Scala stack Bundle and scale up Spark jobs by deploying them into a variety of cluster managers Run streaming and graph analytics in Spark to visualize data

enabling exploratory analysis In Detail This book will introduce you to the most popular Scala tools libraries and frameworks through practical recipes around loading manipulating and preparing your data It will also help you explore and make sense of your data using stunning and insightfulvisualizations and machine learning toolkits Starting with introductory recipes on utilizing the Breeze and Spark libraries get to grips withhow to import data from a host of possible sources and how to pre process numerical string and date data Next you ll get an understanding of concepts that will help you visualize data using the Apache Zeppelin and Bokeh bindings in Scala enabling exploratory data analysis iscover how to program quintessential machine learning algorithms using Spark ML library Work through steps to scale your machine learning models and deploy them into a standalone cluster EC2 YARN and Mesos Finally dip into the powerful options presented by Spark Streaming and machine learning for streaming data as well as utilizing Spark GraphX Style and approach This book contains a rich set of recipes that covers the full spectrum of interesting data analysis tasks and will help you revolutionize your data analysis skills using Scala and Spark 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 completearchitecture 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 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

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 Systems** Jeffrey Smith,2018-05-21 Summary Machine Learning Systems Designs that scale is an example rich guide that teaches you how to implement reactive design solutions in your machine learning systems to make them as reliable as a well built web app Foreword by Sean Owen Director of Data Science Cloudera Purchase of the print book includes a free eBook in PDF Kindle and ePub formats from Manning Publications About the Technology If you re building machine learning models to be used on a small scale you don t need this book But if you re a developer building a production grade ML application that needs quick response times reliability and good user experience this is the book for you It collects principles and practices of machine learning systems that are dramatically easier to run and maintain and that are reliably better for users About the Book Machine Learning Systems Designs that scale teaches you to design and implement production ready ML systems You ll learn the principles of reactive design as you build pipelines with Spark create highly scalable services with Akka and use powerful machine learning libraries like MLib on massive datasets The examples use the Scala language but the same ideas and tools work in Java as well What s Inside Working with Spark MLlib and Akka Reactive design patterns Monitoring and maintaining a large scale system Futures actors and supervision About the Reader Readers need intermediate skills in Java or Scala No prior machine learning experience is assumed About the Author Jeff Smith builds powerful machine learning systems For the past decade he has been working on building data science applications teams and companies as part of various teams in New York San Francisco and Hong Kong He blogs https medium com jeffksmithjr tweets jeffksmithjr and speaks www jeffsmith tech speaking about various aspects of building real world machine learning systems Table of Contents PART 1 FUNDAMENTALS OF REACTIVE MACHINE

LEARNING Learning reactive machine learning Using reactive tools PART 2 BUILDING A REACTIVE MACHINE LEARNING SYSTEM Collecting data Generating features Learning models Evaluating models Publishing models Responding PART 3 OPERATING A MACHINE LEARNING SYSTEM Delivering Evolving intelligence **Scala for Data Science** Pascal Bugnion,2016-01-28 Leverage the power of Scala with different tools to build scalable robust data science applications About This Book A complete guide for scalable data science solutions from data ingestion to data visualization Deploy horizontally scalable data processing pipelines and take advantage of web frameworks to build engaging visualizations Build functional type safe routines to interact with relational and NoSQL databases with the help of tutorials and examples provided Who This Book Is For If you are a Scala developer or data scientist or if you want to enter the field of data science then this book will give you all the tools you need to implement data science solutions What You Will Learn Transform and filter tabular data to extract features for machine learning Implement your own algorithms or take advantage of MLLib s extensive suite of models to build distributed machine learning pipelines Read transform and write data to both SQL and NoSQL databases in a functional manner Write robust routines to query web APIs Read data from web APIs such as the GitHub or Twitter API Use Scala to interact with MongoDB which offers high performance and helps to store large data sets with uncertain query requirements Create Scala web applications that couple with JavaScript libraries such as D3 to create compelling interactive visualizations Deploy scalable parallel applications using Apache Spark loading data from HDFS or Hive In Detail Scala is a multi paradigm programming language it supports both object oriented and functional programming and scripting language used to build applications for the JVM Languages such as R Python Java and so on are mostly used for data science It is particularly good at analyzing large sets of data without any significant impact on performance and thus Scala is being adopted by many developers and data scientists Data scientists might be aware that building applications that are truly scalable is hard Scala with its powerful functional libraries for interacting with databases and building scalable frameworks will give you the tools to construct robust data pipelines This book will introduce you to the libraries for ingesting storing manipulating processing and visualizing data in Scala Packed with real world examples and interesting data sets this book will teach you to ingest data from flat files and web APIs and store it in a SQL or NoSQL database It will show you how to design scalable architectures to process and modelling your data starting from simple concurrency constructs such as parallel collections and futures through to actor systems and Apache Spark As well as Scala s emphasis on functional structures and immutability you will learn how to use the right parallel construct for the job at hand minimizing development time without compromising scalability Finally you will learn how to build beautiful interactive visualizations using web frameworks This book gives tutorials on some of the most common Scala libraries for data science allowing you to quickly get up to speed with building data science and data engineering solutions Style and approach A tutorial with complete examples this book will give you the tools to start building useful data engineering and data science solutions straightaway

Modern Scala Projects Ilango gurusamy,2018-07-30 Develop robust Scala powered projects with the help of machine learning libraries such as SparkML to harvest meaningful insight Key Features Gain hands on experience in building data science projects with Scala Exploit powerful functionalities of machine learning libraries Use machine learning algorithms and decision tree models for enterprise apps Book Description Scala together with the Spark Framework forms a rich and powerful data processing ecosystem Modern Scala Projects is a journey into the depths of this ecosystem The machine learning ML projects presented in this book enable you to create practical robust data analytics solutions with an emphasis on automating data workflows with the Spark ML pipeline API This book showcases or carefully cherry picks from Scala s functional libraries and other constructs to help readers roll out their own scalable data processing frameworks The projects in this book enable data practitioners across all industries gain insights into data that will help organizations have strategic and competitive advantage Modern Scala Projects focuses on the application of supervisory learning ML techniques that classify data and make predictions You ll begin with working on a project to predict a class of flower by implementing a simple machine learning model Next you ll create a cancer diagnosis classification pipeline followed by projects delving into stock price prediction spam filtering fraud detection and a recommendation engine By the end of this book you will be able to build efficient data science projects that fulfil your software requirements What you will learn Create pipelines to extract data or analytics and visualizations Automate your process pipeline with jobs that are reproducible Extract intelligent data efficiently from large disparate datasets Automate the extraction transformation and loading of data Develop tools that collate model and analyze data Maintain the integrity of data as data flows become more complex Develop tools that predict outcomes based on pattern discovery Build really fast and accurate machine learning models in Scala Who this book is for Modern Scala Projects is for Scala developers who would like to gain some hands on experience with some interesting real world projects Prior programming experience with Scala is necessary **Machine Learning with Scala** Alex Minnaar,2016 The ability to apply machine learning techniques to large datasets is becoming a highly sought after skill in the world of technology Scala can help you deliver key insights into your data its unique capabilities as a language let you build sophisticated algorithms and statistical models For this reason machine learning and Scala fit together perfectly and knowledge of both would be beneficial for anyone entering the data science field The course starts with a general introduction to the Scala programming language From there you ll be introduced to several practical machine learning algorithms from the areas of exploratory data analysis You ll look at supervised learning machine learning models for prediction and classification tasks and unsupervised learning techniques such as clustering and dimensionality reduction and neural networks By the end you will be comfortable applying machine learning algorithms to solve real world problems using Scala Resource description page *Machine Learning* Thomas Farth,2018-11-14 Machine Learning Beginner to Intermediate s Guide in Python R Scala Are you thinking of learning more about Machine Learning Want to learn Machine

Learning Algoirthms Do you want to explore Python R Scala libraries for Machine Learning Then You are at right place A Bundle of Two Awesome Books for Machine Learning Lovers This bundle and the accompanying examples you would be well suited to tackle problems which enhance your interests using machine learning The title opens with a general introduction to machine learning from a macro level The second half of the book is more practical and dives into introducing mathematical concepts specific algorithms introduction to programming languages best programming languages for Machine Learning and libraries of Python applied in Machine Learning It would seek to explain common terms and algorithms in an intuitive way The authors used a progressive approach whereby we start out slowly and improve on the complexity of our solutions This bundle and the accompanying examples you would be well suited to tackle problems which enhance your interests using machine learning The title opens with a general introduction to machine learning from a macro level The second half of the book is more practical and dives into Data Processing Regression Classification Clustering Natural Language Processing and Deep Learning Just a few more benefits this bundle will provide Introduction to Programming Language Tools for Machine Learning Introduction to MLlib Apache Spark Libraries of Python Master Machine Learning on Python R Have a Great intuition of many Machine Learning models Regression Classification Handle specific topics like NLP Clustering Deep Learning Download your copy now so you can get started on what is promising to be a most amazing future

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Scala For Machine Learning Introduction

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