

Download Free Apache Kafka 1 0 Cookbook Over 100 Practical Recipes On Using Distributed Enterprise Messaging To Handle Real Time Data

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Building distributed applications is difficult enough without having to coordinate the actions that make them work. This practical guide shows how Apache ZooKeeper helps you manage distributed systems, so you can focus mainly on application logic. Even with ZooKeeper, implementing coordination tasks is not trivial, but this book provides good practices to give you a head start, and points out caveats that developers and administrators alike need to watch for along the way. In three separate sections, ZooKeeper contributors Flavio Junqueira and Benjamin Reed introduce the principles of distributed systems, provide ZooKeeper programming techniques, and include the information you need to administer this service. Learn how ZooKeeper solves common coordination tasks Explore the ZooKeeper API's Java and C implementations and how they differ Use methods to track and react to ZooKeeper state changes Handle failures of the network, application processes, and ZooKeeper itself Learn about ZooKeeper's trickier aspects dealing with concurrency, ordering, and

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configuration Use the Curator high-level interface for connection management Become familiar with ZooKeeper internals and administration tools

Rising Sun travels to rescue his cousins who along with the entire town have been held as hostages in the Oklahoma Territory. After freeing his cousins he travels to the Apache Nations to rescue his blood brother who is being held captive by the Comancheros. Rising Sun, his cousin and the cowboys from the Tribal Ranch have many adventures during these rescues. The story is full of action and will keep you on your seats edge reading all about it. If you enjoyed reading the story of Rising Sun To The Rescue then you will love the next book in the Rising Sun Series. Tell all your friends about the author Buddy Hannah.

Every enterprise application creates data, whether it's log messages, metrics, user activity, outgoing messages, or something else. And how to move all of this data becomes nearly as important as the data itself. If you're an application architect, developer, or production engineer new to Apache Kafka, this practical guide shows you how to use this open source streaming platform to handle real-time data feeds. Engineers from Confluent and LinkedIn who are responsible for developing Kafka explain how to deploy production Kafka clusters, write reliable event-driven microservices, and build scalable stream-processing applications with this platform. Through detailed examples, you'll learn Kafka's design

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principles, reliability guarantees, key APIs, and architecture details, including the replication protocol, the controller, and the storage layer. Understand publish-subscribe messaging and how it fits in the big data ecosystem. Explore Kafka producers and consumers for writing and reading messages Understand Kafka patterns and use-case requirements to ensure reliable data delivery Get best practices for building data pipelines and applications with Kafka Manage Kafka in production, and learn to perform monitoring, tuning, and maintenance tasks Learn the most critical metrics among Kafka's operational measurements Explore how Kafka's stream delivery capabilities make it a perfect source for stream processing systems

Handle every problem you come across in the world of Clojure programming with this expert collection of recipes About This Book Discover a wide variety of practical cases and real world techniques to enhance your productivity with Clojure. Learn to resolve the everyday issues you face with a functional mindset using Clojure You will learn to write highly efficient, more productive, and error-free programs without the risk of deadlocks and race-conditions Who This Book Is For This book is for Clojure developers who have some Clojure programming experience and are well aware of their shortcomings. If you want to learn to tackle common problems, become an expert, and develop a solid skill set, then

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this book is for you. What You Will Learn Manipulate, access, filter, and transform your data with Clojure Write efficient parallelized code through Clojure abstractions Tackle Complex Concurrency easily with Reactive Programming Build on Haskell abstractions to write dynamic functional tests Write AWS Lambda functions effortlessly Put Clojure in use into your IoT devices Use Clojure with Slack for instant monitoring Scaling your Clojure application using Docker Develop real-time system interactions using MQTT and websockets In Detail When it comes to learning and using a new language you need an effective guide to be by your side when things get rough. For Clojure developers, these recipes have everything you need to take on everything this language offers. This book is divided into three high impact sections. The first section gives you an introduction to live programming and best practices. We show you how to interact with your connections by manipulating, transforming, and merging collections. You'll learn how to work with macros, protocols, multi-methods, and transducers. We'll also teach you how to work with languages such as Java, and Scala. The next section deals with intermediate-level content and enhances your Clojure skills, here we'll teach you concurrency programming with Clojure for high performance. We will provide you with advanced best practices, tips on Clojure programming, and show you how to work with Clojure while developing

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applications. In the final section you will learn how to test, deploy and analyze websocket behavior when your app is deployed in the cloud. Finally, we will take you through DevOps. Developing with Clojure has never been easier with these recipes by your side! Style and approach This book takes a recipe-based approach by diving directly into helpful programming concepts. It will give you a foolproof approach to programming and teach you how to deal with problems that may arise while working with Clojure. The book is divided into three sections giving you the freedom skip to the section of your choice depending on the problem faced.

Over 70 recipes to help you use Apache Spark as your single big data computing platform and master its libraries About This Book This book contains recipes on how to use Apache Spark as a unified compute engine Cover how to connect various source systems to Apache Spark Covers various parts of machine learning including supervised/unsupervised learning & recommendation engines Who This Book Is For This book is for data engineers, data scientists, and those who want to implement Spark for real-time data processing. Anyone who is using Spark (or is planning to) will benefit from this book. The book assumes you have a basic knowledge of Scala as a programming language. What You Will Learn Install and configure Apache Spark with various cluster managers & on AWS Set

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up a development environment for Apache Spark including Databricks Cloud notebook Find out how to operate on data in Spark with schemas Get to grips with real-time streaming analytics using Spark Streaming & Structured Streaming Master supervised learning and unsupervised learning using MLlib Build a recommendation engine using MLlib Graph processing using GraphX and GraphFrames libraries Develop a set of common applications or project types, and solutions that solve complex big data problems In Detail While Apache Spark 1.x gained a lot of traction and adoption in the early years, Spark 2.x delivers notable improvements in the areas of API, schema awareness, Performance, Structured Streaming, and simplifying building blocks to build better, faster, smarter, and more accessible big data applications. This book uncovers all these features in the form of structured recipes to analyze and mature large and complex sets of data. Starting with installing and configuring Apache Spark with various cluster managers, you will learn to set up development environments. Further on, you will be introduced to working with RDDs, DataFrames and Datasets to operate on schema aware data, and real-time streaming with various sources such as Twitter Stream and Apache Kafka. You will also work through recipes on machine learning, including supervised learning, unsupervised learning & recommendation engines in Spark. Last but not least, the final few

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chapters delve deeper into the concepts of graph processing using GraphX, securing your implementations, cluster optimization, and troubleshooting. Style and approach This book is packed with intuitive recipes supported with line-by-line explanations to help you understand Spark 2.x's real-time processing capabilities and deploy scalable big data solutions. This is a valuable resource for data scientists and those working on large-scale data projects.

Need to move a relational database application to Hadoop? This comprehensive guide introduces you to Apache Hive, Hadoop's data warehouse infrastructure. You'll quickly learn how to use Hive's SQL dialect—HiveQL—to summarize, query, and analyze large datasets stored in Hadoop's distributed filesystem. This example-driven guide shows you how to set up and configure Hive in your environment, provides a detailed overview of Hadoop and MapReduce, and demonstrates how Hive works within the Hadoop ecosystem. You'll also find real-world case studies that describe how companies have used Hive to solve unique problems involving petabytes of data. Use Hive to create, alter, and drop databases, tables, views, functions, and indexes Customize data formats and storage options, from files to external databases Load and extract data from tables—and use queries, grouping, filtering, joining, and other conventional query methods Gain best practices for creating user defined functions (UDFs) Learn

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Hive patterns you should use and anti-patterns you should avoid Integrate Hive with other data processing programs Use storage handlers for NoSQL databases and other datastores Learn the pros and cons of running Hive on Amazon's Elastic MapReduce

Summary Kafka Streams in Action teaches you everything you need to know to implement stream processing on data flowing into your Kafka platform, allowing you to focus on getting more from your data without sacrificing time or effort.

Foreword by Neha Narkhede, Cocreator of Apache Kafka Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Not all stream-based applications require a dedicated processing cluster. The lightweight Kafka Streams library provides exactly the power and simplicity you need for message handling in microservices and real-time event processing. With the Kafka Streams API, you filter and transform data streams with just Kafka and your application. About the Book Kafka Streams in Action teaches you to implement stream processing within the Kafka platform. In this easy-to-follow book, you'll explore real-world examples to collect, transform, and aggregate data, work with multiple processors, and handle real-time events. You'll even dive into streaming SQL with KSQL! Practical to the very end, it finishes with testing and operational aspects, such as monitoring and

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debugging. What's inside Using the KStreams API Filtering, transforming, and splitting data Working with the Processor API Integrating with external systems About the Reader Assumes some experience with distributed systems. No knowledge of Kafka or streaming applications required. About the Author Bill Bejeck is a Kafka Streams contributor and Confluent engineer with over 15 years of software development experience. Table of Contents PART 1 - GETTING STARTED WITH KAFKA STREAMS Welcome to Kafka Streams Kafka quicklyPART 2 - KAFKA STREAMS DEVELOPMENT Developing Kafka Streams Streams and state The KTable API The Processor APIPART 3 - ADMINISTERING KAFKA STREAMS Monitoring and performance Testing a Kafka Streams applicationPART 4 - ADVANCED CONCEPTS WITH KAFKA STREAMS Advanced applications with Kafka StreamsAPPENDIXES Appendix A - Additional configuration information Appendix B - Exactly once semantics Learn the right cutting-edge skills and knowledge to leverage Spark Streaming to implement a wide array of real-time, streaming applications. This book walks you through end-to-end real-time application development using real-world applications, data, and code. Taking an application-first approach, each chapter introduces use cases from a specific industry and uses publicly available datasets from that domain to unravel the intricacies of production-grade design

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and implementation. The domains covered in Pro Spark Streaming include social media, the sharing economy, finance, online advertising, telecommunication, and IoT. In the last few years, Spark has become synonymous with big data processing. DStreams enhance the underlying Spark processing engine to support streaming analysis with a novel micro-batch processing model. Pro Spark Streaming by Zubair Nabi will enable you to become a specialist of latency sensitive applications by leveraging the key features of DStreams, micro-batch processing, and functional programming. To this end, the book includes ready-to-deploy examples and actual code. Pro Spark Streaming will act as the bible of Spark Streaming. What You'll Learn Discover Spark Streaming application development and best practices Work with the low-level details of discretized streams Optimize production-grade deployments of Spark Streaming via configuration recipes and instrumentation using Graphite, collectd, and Nagios Ingest data from disparate sources including MQTT, Flume, Kafka, Twitter, and a custom HTTP receiver Integrate and couple with HBase, Cassandra, and Redis Take advantage of design patterns for side-effects and maintaining state across the Spark Streaming micro-batch model Implement real-time and scalable ETL using data frames, SparkSQL, Hive, and SparkR Use streaming machine learning, predictive analytics, and recommendations Mesh batch processing with

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stream processing via the Lambda architecture Who This Book Is For Data scientists, big data experts, BI analysts, and data architects.

Easy, hands-on recipes to help you understand Hive and its integration with frameworks that are used widely in today's big data world About This Book Grasp a complete reference of different Hive topics. Get to know the latest recipes in development in Hive including CRUD operations Understand Hive internals and integration of Hive with different frameworks used in today's world. Who This Book Is For The book is intended for those who want to start in Hive or who have basic understanding of Hive framework. Prior knowledge of basic SQL command is also required What You Will Learn Learn different features and offering on the latest Hive Understand the working and structure of the Hive internals Get an insight on the latest development in Hive framework Grasp the concepts of Hive Data Model Master the key concepts like Partition, Buckets and Statistics Know how to integrate Hive with other frameworks such as Spark, Accumulo, etc In Detail Hive was developed by Facebook and later open sourced in Apache community. Hive provides SQL like interface to run queries on Big Data frameworks. Hive provides SQL like syntax also called as HiveQL that includes all SQL capabilities like analytical functions which are the need of the hour in today's Big Data world. This book provides you easy installation steps with

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different types of metastores supported by Hive. This book has simple and easy to learn recipes for configuring Hive clients and services. You would also learn different Hive optimizations including Partitions and Bucketing. The book also covers the source code explanation of latest Hive version. Hive Query Language is being used by other frameworks including spark. Towards the end you will cover integration of Hive with these frameworks. Style and approach Starting with the basics and covering the core concepts with the practical usage, this book is a complete guide to learn and explore Hive offerings.

Get to grips with building and productionizing end-to-end big data solutions in Azure and learn best practices for working with large datasets Key Features Integrate with Azure Synapse Analytics, Cosmos DB, and Azure HDInsight Kafka Cluster to scale and analyze your projects and build pipelines Use Databricks SQL to run ad hoc queries on your data lake and create dashboards Productionize a solution using CI/CD for deploying notebooks and Azure Databricks Service to various environments Book Description Azure Databricks is a unified collaborative platform for performing scalable analytics in an interactive environment. The Azure Databricks Cookbook provides recipes to get hands-on with the analytics process, including ingesting data from various batch and streaming sources and building a modern data warehouse. The book starts by

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teaching you how to create an Azure Databricks instance within the Azure portal, Azure CLI, and ARM templates. You'll work through clusters in Databricks and explore recipes for ingesting data from sources, including files, databases, and streaming sources such as Apache Kafka and EventHub. The book will help you explore all the features supported by Azure Databricks for building powerful end-to-end data pipelines. You'll also find out how to build a modern data warehouse by using Delta tables and Azure Synapse Analytics. Later, you'll learn how to write ad hoc queries and extract meaningful insights from the data lake by creating visualizations and dashboards with Databricks SQL. Finally, you'll deploy and productionize a data pipeline as well as deploy notebooks and Azure Databricks service using continuous integration and continuous delivery (CI/CD). By the end of this Azure book, you'll be able to use Azure Databricks to streamline different processes involved in building data-driven apps. What you will learn

- Read and write data from and to various Azure resources and file formats
- Build a modern data warehouse with Delta Tables and Azure Synapse Analytics
- Explore jobs, stages, and tasks and see how Spark lazy evaluation works
- Handle concurrent transactions and learn performance optimization in Delta tables
- Learn Databricks SQL and create real-time dashboards in Databricks SQL
- Integrate Azure DevOps for version control, deploying, and

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productionizing solutions with CI/CD pipelines Discover how to use RBAC and ACLs to restrict data access Build end-to-end data processing pipeline for near real-time data analytics Who this book is for This recipe-based book is for data scientists, data engineers, big data professionals, and machine learning engineers who want to perform data analytics on their applications. Prior experience of working with Apache Spark and Azure is necessary to get the most out of this book.

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

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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

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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. From lambda expressions and JavaFX 8 to new support for network programming and mobile development, Java 8 brings a wealth of changes. This cookbook helps you get up to speed right away with hundreds of hands-on recipes across a broad range of Java topics. You'll learn useful techniques for everything from debugging and data structures to GUI development and functional programming. Each recipe includes self-contained code solutions that you can freely use, along with a discussion of how and why they work. If you are familiar with Java basics, this cookbook will bolster your knowledge of the language in general and Java 8's main APIs in particular. Recipes include:

- Methods for compiling, running, and debugging
- Manipulating, comparing, and rearranging text
- Regular expressions for string- and pattern-matching
- Handling numbers, dates, and times
- Structuring data with collections, arrays, and other types
- Object-oriented and functional programming techniques
- Directory and filesystem operations
- Working with graphics, audio, and video
- GUI development, including JavaFX and handlers
- Network programming on both client and server
- Database access, using JPA, Hibernate, and JDBC
- Processing JSON and XML

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for data storage Multithreading and concurrency

Optimized for Kubernetes, Quarkus is designed to help you create Java applications that are cloud first, container native, and serverless capable. With this cookbook, authors Alex Soto Bueno and Jason Porter from Red Hat provide detailed solutions for installing, interacting with, and using Quarkus in the development and production of microservices. The recipes in this book show midlevel to senior developers familiar with Java enterprise application development how to get started with Quarkus quickly. You'll become familiar with how Quarkus works within the wider Java ecosystem and discover ways to adapt this framework to your particular needs. You'll learn how to: Shorten the development cycle by enabling live reloading in dev mode Connect to and communicate with Kafka Develop with the reactive programming model Easily add fault tolerance to your services Build your application as a Kubernetes-ready container Ease development with OpenAPI and test a native Quarkus application Data Pipelines with Apache Airflow teaches you the ins-and-outs of the Directed Acyclic Graphs (DAGs) that power Airflow, and how to write your own DAGs to meet the needs of your projects. With complete coverage of both foundational and lesser-known features, when you're done you'll be set to start using Airflow for seamless data pipeline development and management. Pipelines can be

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challenging to manage, especially when your data has to flow through a collection of application components, servers, and cloud services. Airflow lets you schedule, restart, and backfill pipelines, and its easy-to-use UI and workflows with Python scripting has users praising its incredible flexibility. Data Pipelines with Apache Airflow takes you through best practices for creating pipelines for multiple tasks, including data lakes, cloud deployments, and data science. Data Pipelines with Apache Airflow teaches you the ins-and-outs of the Directed Acyclic Graphs (DAGs) that power Airflow, and how to write your own DAGs to meet the needs of your projects. With complete coverage of both foundational and lesser-known features, when you're done you'll be set to start using Airflow for seamless data pipeline development and management. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

Learn how to use the Akka framework to build effective applications in Scala About This Book Covers a discussion on Lagom—the newest launched Akka framework that is built to create complex microservices easily The recipe approach of the book allows the reader to know important and independent concepts of Scala and Akka in a seamless manner Provides a comprehensive understanding of the Akka actor model and implementing it to create reactive

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web applications Who This Book Is For If you are a Scala developer who wants to build scalable and concurrent applications, then this book is for you. Basic knowledge of Akka will help you take advantage of this book. What You Will Learn Control an actor using the ContolAware mailbox Test a fault-tolerant application using the Akka test kit Create a parallel application using futures and agents Package and deploy Akka application inside Docker Deploy remote actors programmatically on different nodes Integrate Streams with Akka actors Install Lagom and create a Lagom project In Detail Akka is an open source toolkit that simplifies the construction of distributed and concurrent applications on the JVM. This book will teach you how to develop reactive applications in Scala using the Akka framework. This book will show you how to build concurrent, scalable, and reactive applications in Akka. You will see how to create high performance applications, extend applications, build microservices with Lagom, and more. We will explore Akka's actor model and show you how to incorporate concurrency into your applications. The book puts a special emphasis on performance improvement and how to make an application available for users. We also make a special mention of message routing and construction. By the end of this book, you will be able to create a high-performing Scala application using the Akka framework. Style and approach This highly practical recipe-based approach will

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allow you to build scalable, robust, and reactive applications using the Akka framework.

Would you like to use a consistent visual notation for drawing integration solutions? "Look inside the front cover." Do you want to harness the power of asynchronous systems without getting caught in the pitfalls? "See "Thinking Asynchronously" in the Introduction." Do you want to know which style of application integration is best for your purposes? "See Chapter 2, Integration Styles." Do you want to learn techniques for processing messages concurrently? "See Chapter 10, Competing Consumers and Message Dispatcher." Do you want to learn how you can track asynchronous messages as they flow across distributed systems? "See Chapter 11, Message History and Message Store." Do you want to understand how a system designed using integration patterns can be implemented using Java Web services, .NET message queuing, and a TIBCO-based publish-subscribe architecture? "See Chapter 9, Interlude: Composed Messaging." Utilizing years of practical experience, seasoned experts Gregor Hohpe and Bobby Woolf show how asynchronous messaging has proven to be the best strategy for enterprise integration success. However, building and deploying messaging solutions presents a number of problems for developers. "Enterprise Integration Patterns " provides an invaluable catalog of sixty-five

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patterns, with real-world solutions that demonstrate the formidable of messaging and help you to design effective messaging solutions for your enterprise. The authors also include examples covering a variety of different integration technologies, such as JMS, MSMQ, TIBCO ActiveEnterprise, Microsoft BizTalk, SOAP, and XSL. A case study describing a bond trading system illustrates the patterns in practice, and the book offers a look at emerging standards, as well as insights into what the future of enterprise integration might hold. This book provides a consistent vocabulary and visual notation framework to describe large-scale integration solutions across many technologies. It also explores in detail the advantages and limitations of asynchronous messaging architectures. The authors present practical advice on designing code that connects an application to a messaging system, and provide extensive information to help you determine when to send a message, how to route it to the proper destination, and how to monitor the health of a messaging system. If you want to know how to manage, monitor, and maintain a messaging system once it is in use, get this book.

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Lots of Kids write letters to Santa, but those delivered to the North Pole are answered by a group of dedicated volunteers who call themselves The Elves. Blame It On Mistletoe – Abby Baxter has spent the year since her husband's

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death trying to hold on. When she discovers her son is missing, her entire world trembles— until her husband’s best friend appears at her door. Secretly in love with Abby for years, Frank Machado is determined to see JD back in his mother’s arms. Sparks fly, hearts warm, love—and Christmas—are in the air. Should they Blame it on Mistletoe? If Only In My Dreams – Jilted in North Pole, Alaska, café owner Amelia Beckett’s bad man-karma has struck again! She wants out of this cutesy town—until a snarling, injured fox in her backyard sends her running to strong, silent neighbor and café regular, Wes Curtis. Wes moved to Alaska after his wife died, not expecting he’d need to brush up admittedly rusty dating skills. But moonlit nights spent helping beautiful, skittish Amelia and the fox relax and heal make him determined to convince Amelia she belongs in Alaska—with him What Child is This? - Hope Grayson’s six-year-old daughter clearly wants a daddy for Christmas. Eli Thompson has never forgotten Hope, realizing just how much he’s missed her. When he unexpectedly shows up to help in the clinic, Hope is stunned. She wants to protect her daughter and her heart, but is it possible Eli is the perfect Christmas present for them both? This book provides an introduction to Apache HTTP Server - a free, open-source web server. Apache is the most popular web server software on the Internet; it is estimated that 50% of all active websites use Apache as their web server. You

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will learn how to download and install Apache HTTP Server on your Windows and Linux system, how to configure Apache as a web server, a proxy server, and a reverse proxy server. You will also learn to set up SSL and password-protect directories on your web server. Later in the book we explain modules and how you can use them to add more features to your web server. The topics covered in this book are: downloading and installing Apache HTTP Server on Ubuntu and Windows understanding Apache configuration files using virtual hosts to hold multiple websites on a single server enabling SSL for secure connections what are modules and how to use them to expand Apache functionality configuring Apache as a forward or reverse proxy redirecting URLs Note that this book uses Ubuntu as an underlying Linux distribution, so some of the commands and configurations files might differ if you are using some other non-Debian based Linux distribution.

This book is for readers who want to know more about Apache Kafka at a hands-on level; the key audience is those with software development experience but no prior exposure to Apache Kafka or similar technologies. It is also useful for enterprise application developers and big data enthusiasts who have worked with other publisher-subscriber-based systems and want to explore Apache Kafka as a futuristic solution.

Quickly find solutions to common programming problems encountered while processing big data. Content is presented in the popular problem-solution format. Look up the programming

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problem that you want to solve. Read the solution. Apply the solution directly in your own code. Problem solved! PySpark Recipes covers Hadoop and its shortcomings. The architecture of Spark, PySpark, and RDD are presented. You will learn to apply RDD to solve day-to-day big data problems. Python and NumPy are included and make it easy for new learners of PySpark to understand and adopt the model. What You Will Learn Understand the advanced features of PySpark2 and SparkSQL Optimize your code Program SparkSQL with Python Use Spark Streaming and Spark MLlib with Python Perform graph analysis with GraphFrames Who This Book Is For Data analysts, Python programmers, big data enthusiasts

Over 50 hands-on recipes to efficiently administer, maintain, and use your Apache Kafka installation About This Book- Quickly configure and manage your Kafka cluster- Learn how to use the Apache Kafka cluster and connect it with tools for big data processing- A practical guide to monitor your Apache Kafka installation Who This Book Is For If you are a programmer or big data engineer using or planning to use Apache Kafka, then this book is for you. This book has several recipes which will teach you how to effectively use Apache Kafka. You need to have some basic knowledge of Java. If you don't know big data tools, this would be your stepping stone for learning how to consume the data in these kind of systems. What You Will Learn- Learn how to configure Kafka brokers for better efficiency- Explore how to configure producers and consumers for optimal performance- Set up tools for maintaining and operating Apache Kafka- Create producers and consumers for Apache Kafka in Java- Understand how Apache Kafka can be used by several third party system for big data processing, such as Apache Storm, Apache Spark, Hadoop, and more- Monitor Apache Kafka using tools like graphite and Ganglia In Detail This book will give you details about how to manage and

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administer your Apache Kafka Cluster. We will cover topics like how to configure your broker, producer, and consumer for maximum efficiency for your situation. Also, you will learn how to maintain and administer your cluster for fault tolerance. We will also explore tools provided with Apache Kafka to do regular maintenance operations. We shall also look at how to easily integrate Apache Kafka with big data tools like Hadoop, Apache Spark, Apache Storm, and Elasticsearch. Style and approach Easy-to-follow, step-by-step recipes explaining from start to finish how to accomplish real-world tasks.

The fourth edition of Node Cookbook covers the latest features and libraries of Node.js 14. With this recipe-based guide, you'll learn how to handle files, build simple web applications, and build your own modules using Node.js. You'll also be able to diagnose problems in your apps, handle security concerns, and deploy your apps to the cloud.

Process large volumes of data in real-time while building high performance and robust data stream processing pipeline using the latest Apache Kafka 2.0 Key Features Solve practical large data and processing challenges with Kafka Tackle data processing challenges like late events, windowing, and watermarking Understand real-time streaming applications processing using Schema registry, Kafka connect, Kafka streams, and KSQL Book Description Apache Kafka is a great open source platform for handling your real-time data pipeline to ensure high-speed filtering and pattern matching on the fly. In this book, you will learn how to use Apache Kafka for efficient processing of distributed applications and will get familiar with solving everyday problems in fast data and processing pipelines. This book focuses on programming rather than the configuration management of Kafka clusters or DevOps. It starts off with the installation and setting up the development environment, before quickly moving on to

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performing fundamental messaging operations such as validation and enrichment. Here you will learn about message composition with pure Kafka API and Kafka Streams. You will look into the transformation of messages in different formats, such as avro, binary, XML, JSON, and AVRO. Next, you will learn how to expose the schemas contained in Kafka with the Schema Registry. You will then learn how to work with all relevant connectors with Kafka Connect. While working with Kafka Streams, you will perform various interesting operations on streams, such as windowing, joins, and aggregations. Finally, through KSQL, you will learn how to retrieve, insert, modify, and delete data streams, and how to manipulate watermarks and windows. What you will learn

- How to validate data with Kafka
- Add information to existing data flows
- Generate new information through message composition
- Perform data validation and versioning with the Schema Registry
- How to perform message Serialization and Deserialization
- How to perform message Serialization and Deserialization
- Process data streams with Kafka Streams
- Understand the duality between tables and streams with KSQL

Who this book is for This book is for developers who want to quickly master the practical concepts behind Apache Kafka. The audience need not have come across Apache Kafka previously; however, a familiarity of Java or any JVM language will be helpful in understanding the code in this book.

This book is written in a Cookbook style with short recipes showing developers how to effectively implement EIP without breaking everything in the process. It is concise and to the point, and it helps developers get their data flowing between different components without the need to read through page upon page of theory, while also enabling the reader to learn how to create exciting new projects. Camel Enterprise Integration Cookbook is intended for

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developers who have some familiarity with Apache Camel and who want a quick lookup reference to practical, proven tips on how to perform common tasks. Every recipe also includes a summary and reference pointers for more details that make it easy for you to get a deeper understanding of the Apache Camel capabilities that you will use day to day.

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

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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.

Master over 60 recipes to help you deliver complete, scalable, microservice-based solutions and see the improved business results immediately About This Book Adopt microservices-based architecture and deploy it at scale Build your complete microservice architecture using different recipes for different solutions Identify specific tools for specific scenarios and deliver immediate business results, correlate use cases, and adopt them in your team and organization Who This Book Is For This book is for developers, ops, and DevOps professionals who would like to put microservices to work and improve products, services, and operations. Those looking to build and deploy microservices will find this book useful, as well as managers and people at CXO level looking to adopt microservices in their organization. Prior knowledge

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of Java is expected. No prior knowledge of microservices is assumed. What You Will Learn

- Build microservices using Spring Boot, Wildfly Swarm, Dropwizard, and SparkJava
- Containerize your microservice using Docker
- Deploy microservices using Mesos/Marathon and Kubernetes
- Implement service discovery and load balancing using Zookeeper, Consul, and Nginx
- Monitor microservices using Graphite and Grafana
- Write stream programs with Kafka Streams and Spark Aggregate and manage logs using Kafka

Get introduced to DC/OS, Docker Swarm, and YARN In Detail This book will help any team or organization understand, deploy, and manage microservices at scale. It is driven by a sample application, helping you gradually build a complete microservice-based ecosystem. Rather than just focusing on writing a microservice, this book addresses various other microservice-related solutions: deployments, clustering, load balancing, logging, streaming, and monitoring. The initial chapters offer insights into how web and enterprise apps can be migrated to scalable microservices. Moving on, you'll see how to Dockerize your application so that it is ready to be shipped and deployed. We will look at how to deploy microservices on Mesos and Marathon and will also deploy microservices on Kubernetes. Next, you will implement service discovery and load balancing for your microservices. We'll also show you how to build asynchronous streaming systems using Kafka Streams and Apache Spark. Finally, we wind up by aggregating your logs in Kafka, creating your own metrics, and monitoring the metrics for the microservice. Style and approach This book follows a recipe-driven approach and shows you how to plug and play with all the various pieces, putting them together to build a complete scalable microservice ecosystem. You do not need to study the chapters in order, as you can directly refer to the content you need for your situation.

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Simplify real-time data processing by leveraging the power of Apache Kafka 1.0 Key Features Use Kafka 1.0 features such as Confluent platforms and Kafka streams to build efficient streaming data applications to handle and process your data Integrate Kafka with other Big Data tools such as Apache Hadoop, Apache Spark, and more Hands-on recipes to help you design, operate, maintain, and secure your Apache Kafka cluster with ease Book Description Apache Kafka provides a unified, high-throughput, low-latency platform to handle real-time data feeds. This book will show you how to use Kafka efficiently, and contains practical solutions to the common problems that developers and administrators usually face while working with it. This practical guide contains easy-to-follow recipes to help you set up, configure, and use Apache Kafka in the best possible manner. You will use Apache Kafka Consumers and Producers to build effective real-time streaming applications. The book covers the recently released Kafka version 1.0, the Confluent Platform and Kafka Streams. The programming aspect covered in the book will teach you how to perform important tasks such as message validation, enrichment and composition. Recipes focusing on optimizing the performance of your Kafka cluster, and integrate Kafka with a variety of third-party tools such as Apache Hadoop, Apache Spark, and Elasticsearch will help ease your day to day collaboration with Kafka greatly. Finally, we cover tasks related to monitoring and securing your Apache Kafka cluster using tools such as Ganglia and Graphite. If you're looking to become the go-to person in your organization when it comes to working with Apache Kafka, this book is the only resource you need to have. What you will learn -Install and configure Apache Kafka 1.0 to get optimal performance -Create and configure Kafka Producers and Consumers -Operate your Kafka clusters efficiently by implementing the mirroring technique

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-Work with the new Confluent platform and Kafka streams, and achieve high availability with Kafka -Monitor Kafka using tools such as Graphite and Ganglia -Integrate Kafka with third-party tools such as Elasticsearch, Logstash, Apache Hadoop, Apache Spark, and more Who this book is for This book is for developers and Kafka administrators who are looking for quick, practical solutions to problems encountered while operating, managing or monitoring Apache Kafka. If you are a developer, some knowledge of Scala or Java will help, while for administrators, some working knowledge of Kafka will be useful.

Discover easy-to-follow solutions and techniques to help you to implement applied mathematical concepts such as probability, calculus, and equations using Python's numeric and scientific libraries Key Features Compute complex mathematical problems using programming logic with the help of step-by-step recipes Learn how to utilize Python's libraries for computation, mathematical modeling, and statistics Discover simple yet effective techniques for solving mathematical equations and apply them in real-world statistics Book Description Python, one of the world's most popular programming languages, has a number of powerful packages to help you tackle complex mathematical problems in a simple and efficient way. These core capabilities help programmers pave the way for building exciting applications in various domains, such as machine learning and data science, using knowledge in the computational mathematics domain. The book teaches you how to solve problems faced in a wide variety of mathematical fields, including calculus, probability, statistics and data science, graph theory, optimization, and geometry. You'll start by developing core skills and learning about packages covered in Python's scientific stack, including NumPy, SciPy, and Matplotlib. As you advance, you'll get to grips with more advanced topics of calculus, probability, and

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networks (graph theory). After you gain a solid understanding of these topics, you'll discover Python's applications in data science and statistics, forecasting, geometry, and optimization. The final chapters will take you through a collection of miscellaneous problems, including working with specific data formats and accelerating code. By the end of this book, you'll have an arsenal of practical coding solutions that can be used and modified to solve a wide range of practical problems in computational mathematics and data science. What you will learn Get familiar with basic packages, tools, and libraries in Python for solving mathematical problems Explore various techniques that will help you to solve computational mathematical problems Understand the core concepts of applied mathematics and how you can apply them in computer science Discover how to choose the most suitable package, tool, or technique to solve a certain problem Implement basic mathematical plotting, change plot styles, and add labels to the plots using Matplotlib Get to grips with probability theory with the Bayesian inference and Markov Chain Monte Carlo (MCMC) methods Who this book is for This book is for professional programmers and students looking to solve mathematical problems computationally using Python. Advanced mathematics knowledge is not a requirement, but a basic knowledge of mathematics will help you to get the most out of this book. The book assumes familiarity with Python concepts of data structures.

Summary Camel in Action, Second Edition is the most complete Camel book on the market. Written by core developers of Camel and the authors of the highly acclaimed first edition, this book distills their experience and practical insights so that you can tackle integration tasks like a pro. Forewords by James Strachan and Dr. Mark Little Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the

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Technology Apache Camel is a Java framework that implements enterprise integration patterns (EIPs) and comes with over 200 adapters to third-party systems. A concise DSL lets you build integration logic into your app with just a few lines of Java or XML. By using Camel, you benefit from the testing and experience of a large and vibrant open source community.

About the Book Camel in Action, Second Edition is the definitive guide to the Camel framework. It starts with core concepts like sending, receiving, routing, and transforming data. It then goes in depth on many topics such as how to develop, debug, test, deal with errors, secure, scale, cluster, deploy, and monitor your Camel applications. The book also discusses how to run Camel with microservices, reactive systems, containers, and in the cloud. What's Inside Coverage of all relevant EIPs Camel microservices with Spring Boot Camel on Docker and Kubernetes Error handling, testing, security, clustering, monitoring, and deployment Hundreds of examples in Java and XML About the Reader Readers should be familiar with Java. This book is accessible to beginners and invaluable to experts. About the Author Claus Ibsen is a senior principal engineer working for Red Hat specializing in cloud and integration. He has worked on Apache Camel for the last nine years where he heads the project. Claus lives in Denmark. Jonathan Anstey is an engineering manager at Red Hat and a core Camel contributor. He lives in Newfoundland, Canada.

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Apache Kafka 1.0 Cookbook Over 100 practical recipes on using distributed enterprise messaging to handle real-time data Packt Publishing Ltd

Are you looking to build resilient big data services and applications without compromising on the reliability, stability and the performance of your high-performance, low latency system and have heard that Apache Kafka might be your best bet but have no idea how to use it? And are you looking for a comprehensive guide that will show you everything you need to know about Apache Kafka so you can understand just how it is designed for real-time, high speed data processing as well as how to put it to use? If you've answered YES, Let This Book Introduce You To The World Of Using Apache Kafka To Build World-Class, Low Latency, High Throughput Systems That Have The Ability To Handle High-Volume Real Time Data Feeds Just Like Some Of The World's Biggest Tech Systems Like Twitter, Uber, Netflix, LinkedIn And More! Every successful business nowadays revolves around big data and that's why there is quite a number of platforms, technologies and frameworks that have cropped up to support this over the years. One such solution which is proving to be effective and the best is Apache Kafka, an open source software platform specifically designed for high-speed, real-time data processing, as seen in its ability to support driver and passenger matching on Uber for example and its ability to support many real time services on LinkedIn. The fact that you are reading this means you've probably grown curious about Apache Kafka having heard a lot

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about it and you are wondering what kinds of systems it can be implemented in and how to implement it. Perhaps you are wondering... What exactly does Apache Kafka do that makes so exceptional that major applications like Cisco, Walmart, JPMC, Bank of America, Uber and LinkedIn would use it? Who are the closest competitors and what makes Apache Kafka different? How does Apache Kafka work? How can you use Apache Kafka in building resilient, durable and stable applications and services for your business? If you have these and other related questions about Apache Kafka, this corporate IT training courseware is for you so keep reading, as it will teach you everything you need to understand the inner workings of Apache Kafka like the back of our hand. More precisely, you will learn:

- The basics of big data, including the place of such concepts like Spark, Zookeeper, the Kafka framework and how they all relate-
- An insider look into Kafka framework and Kafka use cases to help you understand real world applications inside out
- The inner workings of Apache Kafka, including Zookeeper watches, Zookeeper's role in cluster membership, the responsibilities and election of the controller broker, replication, partition and the bootstrap server
- How to code producer configurations and consumer groups
- The ins and outs of Kafka data delivery, including delivery semantics, and service goals
- How to master Kafka administrative functions, including dynamic configurations, handling partitions, consumer group tools and more
- And so much more

Even if this is your first encounter with Apache Kafka as a business, this corporate IT training courseware will leave you feeling confident about your ability to start using it to develop and administer fast and reliable IT systems! What's more - you can download all supporting files from Ernesto.Net along with a docker container that has already been staged to help you complete the activities in the book! Scroll up and click Buy Now With 1-Click or Buy Now to get started!

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Enterprise developers face several challenges when it comes to building serverless applications, such as integrating applications and building container images from source. With more than 60 practical recipes, this cookbook helps you solve these issues with Knative—the first serverless platform natively designed for Kubernetes. Each recipe contains detailed examples and exercises, along with a discussion of how and why it works. If you have a good understanding of serverless computing and Kubernetes core resources such as deployment, services, routes, and replicas, the recipes in this cookbook show you how to apply Knative in real enterprise application development. Authors Kamesh Sampath and Burr Sutter include chapters on autoscaling, build and eventing, observability, Knative on OpenShift, and more. With this cookbook, you'll learn how to: Efficiently build, deploy, and manage modern serverless workloads Apply Knative in real enterprise scenarios, including advanced eventing Monitor your Knative serverless applications effectively Integrate Knative with CI/CD principles, such as using pipelines for faster, more successful production deployments Deploy a rich ecosystem of enterprise integration patterns and connectors in Apache Camel K as Kubernetes and Knative components

Carry out data analysis with PySpark SQL, graphframes, and graph data processing using a problem-solution approach. This book provides solutions to problems related to dataframes, data manipulation summarization, and exploratory analysis. You will improve your skills in graph data analysis using graphframes and see how to optimize your PySpark SQL code. PySpark SQL Recipes starts with recipes on creating dataframes from different types of data source, data aggregation and summarization, and exploratory data analysis using PySpark SQL. You'll also discover how to solve problems in graph analysis using graphframes. On

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completing this book, you'll have ready-made code for all your PySpark SQL tasks, including creating dataframes using data from different file formats as well as from SQL or NoSQL databases. What You Will Learn Understand PySpark SQL and its advanced features Use SQL and HiveQL with PySpark SQL Work with structured streaming Optimize PySpark SQL Master graphframes and graph processing Who This Book Is For Data scientists, Python programmers, and SQL programmers.

By introducing in-memory persistent storage, Apache Spark eliminates the need to store intermediate data in filesystems, thereby increasing processing speed by up to 100 times. This book will focus on how to analyze large and complex sets of data. Starting with installing and configuring Apache Spark with various cluster managers, you will cover setting up development environments. You will then cover various recipes to perform interactive queries using Spark SQL and real-time streaming with various sources such as Twitter Stream and Apache Kafka. You will then focus on machine learning, including supervised learning, unsupervised learning, and recommendation engine algorithms. After mastering graph processing using GraphX, you will cover various recipes for cluster optimization and troubleshooting.

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

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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

In 2019, America is bordering on financial collapse after engaging in a third conflict in Iraq. On the home front, the president has provided funding for stem cell research, but medical success is overshadowed after corporate greed intervenes. The intention to benefit those with the greatest need quickly disappears as the replication process is used to clone all major organs. With the advent of cloning, the inevitable occurs when Americas population reaches the saturation point. A chip is now implanted into all citizens, which signals when someone reaches the mandatory age of death. Years left on a chip are for sale, and the hunt for new chips is on. Meanwhile, overseas, the war rages, where people die irrespective of age. Lieutenant Roger DeMarco must put an end to the murder of entire innocent Iraqi villages by those who would harvest the enemy and civilians alike. Doctors are caught on opposing sides of science, and even a reality TV star becomes of national interest when he sells his chip and plans to slowly kill himself in a parade of hedonism. Progress, profit, and morality collide with stunning ferocity as America must evolve or die.

Bridge the gap between basic understanding of Go and use of its advanced features About This Book Discover a number of recipes and approaches to

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develop modern back-end applications Put to use the best practices to combine the recipes for sophisticated parallel tools This book is based on Go 1.8, which is the latest version Who This Book Is For This book is for web developers, programmers, and enterprise developers. Basic knowledge of the Go language is assumed. Experience with back-end application development is not necessary, but may help understand the motivation behind some of the recipes. What You Will Learn Test your application using advanced testing methodologies Develop an awareness of application structures, interface design, and tooling Create strategies for third-party packages, dependencies, and vendoring Get to know tricks on treating data such as collections Handle errors and cleanly pass them along to calling functions Wrap dependencies in interfaces for ease of portability and testing Explore reactive programming design patterns in Go In Detail Go (a.k.a. Golang) is a statically-typed programming language first developed at Google. It is derived from C with additional features such as garbage collection, type safety, dynamic-typing capabilities, additional built-in types, and a large standard library. This book takes off where basic tutorials on the language leave off. You can immediately put into practice some of the more advanced concepts and libraries offered by the language while avoiding some of the common mistakes for new Go developers. The book covers basic type and error handling.

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It explores applications that interact with users, such as websites, command-line tools, or via the file system. It demonstrates how to handle advanced topics such as parallelism, distributed systems, and performance tuning. Lastly, it finishes with reactive and serverless programming in Go. Style and approach This guide is a handy reference for developers to quickly look up Go development patterns. It is a companion to other resources and a reference that will be useful long after reading it through the first time. Each recipe includes working, simple, and tested code that can be used as a reference or foundation for your own applications. Over 90 hands-on recipes to help you learn and master the intricacies of Apache Hadoop 2.X, YARN, Hive, Pig, Oozie, Flume, Sqoop, Apache Spark, and Mahout About This Book Implement outstanding Machine Learning use cases on your own analytics models and processes. Solutions to common problems when working with the Hadoop ecosystem. Step-by-step implementation of end-to-end big data use cases. Who This Book Is For Readers who have a basic knowledge of big data systems and want to advance their knowledge with hands-on recipes. What You Will Learn Installing and maintaining Hadoop 2.X cluster and its ecosystem. Write advanced Map Reduce programs and understand design patterns. Advanced Data Analysis using the Hive, Pig, and Map Reduce programs. Import and export data from various sources using Sqoop and Flume.

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Data storage in various file formats such as Text, Sequential, Parquet, ORC, and RC Files. Machine learning principles with libraries such as Mahout Batch and Stream data processing using Apache Spark In Detail Big data is the current requirement. Most organizations produce huge amount of data every day. With the arrival of Hadoop-like tools, it has become easier for everyone to solve big data problems with great efficiency and at minimal cost. Grasping Machine Learning techniques will help you greatly in building predictive models and using this data to make the right decisions for your organization. Hadoop Real World Solutions Cookbook gives readers insights into learning and mastering big data via recipes. The book not only clarifies most big data tools in the market but also provides best practices for using them. The book provides recipes that are based on the latest versions of Apache Hadoop 2.X, YARN, Hive, Pig, Sqoop, Flume, Apache Spark, Mahout and many more such ecosystem tools. This real-world-solution cookbook is packed with handy recipes you can apply to your own everyday issues. Each chapter provides in-depth recipes that can be referenced easily. This book provides detailed practices on the latest technologies such as YARN and Apache Spark. Readers will be able to consider themselves as big data experts on completion of this book. This guide is an invaluable tutorial if you are planning to implement a big data warehouse for your business. Style and

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approach An easy-to-follow guide that walks you through world of big data. Each tool in the Hadoop ecosystem is explained in detail and the recipes are placed in such a manner that readers can implement them sequentially. Plenty of reference links are provided for advanced reading.

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

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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.

A solution-based guide to put your deep learning models into production with the

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power of Apache Spark Key Features Discover practical recipes for distributed deep learning with Apache Spark Learn to use libraries such as Keras and TensorFlow Solve problems in order to train your deep learning models on Apache Spark Book Description With deep learning gaining rapid mainstream adoption in modern-day industries, organizations are looking for ways to unite popular big data tools with highly efficient deep learning libraries. As a result, this will help deep learning models train with higher efficiency and speed. With the help of the Apache Spark Deep Learning Cookbook, you'll work through specific recipes to generate outcomes for deep learning algorithms, without getting bogged down in theory. From setting up Apache Spark for deep learning to implementing types of neural net, this book tackles both common and not so common problems to perform deep learning on a distributed environment. In addition to this, you'll get access to deep learning code within Spark that can be reused to answer similar problems or tweaked to answer slightly different problems. You will also learn how to stream and cluster your data with Spark. Once you have got to grips with the basics, you'll explore how to implement and deploy deep learning models, such as Convolutional Neural Networks (CNN) and Recurrent Neural Networks (RNN) in Spark, using popular libraries such as TensorFlow and Keras. By the end of the book, you'll have the expertise to train

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and deploy efficient deep learning models on Apache Spark. What you will learn

- Set up a fully functional Spark environment
- Understand practical machine learning and deep learning concepts
- Apply built-in machine learning libraries within Spark
- Explore libraries that are compatible with TensorFlow and Keras
- Explore NLP models such as Word2vec and TF-IDF on Spark
- Organize dataframes for deep learning evaluation
- Apply testing and training modeling to ensure accuracy
- Access readily available code that may be reusable

Who this book is for

If you're looking for a practical and highly useful resource for implementing efficiently distributed deep learning models with Apache Spark, then the Apache Spark Deep Learning Cookbook is for you. Knowledge of the core machine learning concepts and a basic understanding of the Apache Spark framework is required to get the best out of this book. Additionally, some programming knowledge in Python is a plus.

Implement machine learning and deep learning techniques to perform predictive analytics on real-time IoT data

Key Features

- Discover quick solutions to common problems that you'll face while building smart IoT applications
- Implement advanced techniques such as computer vision, NLP, and embedded machine learning
- Build, maintain, and deploy machine learning systems to extract key insights from IoT data

Book Description

Artificial intelligence (AI) is rapidly finding

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practical applications across a wide variety of industry verticals, and the Internet of Things (IoT) is one of them. Developers are looking for ways to make IoT devices smarter and to make users' lives easier. With this AI cookbook, you'll be able to implement smart analytics using IoT data to gain insights, predict outcomes, and make informed decisions, along with covering advanced AI techniques that facilitate analytics and learning in various IoT applications. Using a recipe-based approach, the book will take you through essential processes such as data collection, data analysis, modeling, statistics and monitoring, and deployment. You'll use real-life datasets from smart homes, industrial IoT, and smart devices to train and evaluate simple to complex models and make predictions using trained models. Later chapters will take you through the key challenges faced while implementing machine learning, deep learning, and other AI techniques, such as natural language processing (NLP), computer vision, and embedded machine learning for building smart IoT systems. In addition to this, you'll learn how to deploy models and improve their performance with ease. By the end of this book, you'll be able to package and deploy end-to-end AI apps and apply best practice solutions to common IoT problems. What you will learn

Explore various AI techniques to build smart IoT solutions from scratch
Use machine learning and deep learning techniques to build smart voice recognition

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and facial detection systems Gain insights into IoT data using algorithms and implement them in projects Perform anomaly detection for time series data and other types of IoT data Implement embedded systems learning techniques for machine learning on small devices Apply pre-trained machine learning models to an edge device Deploy machine learning models to web apps and mobile using TensorFlow.js and Java Who this book is for If you're an IoT practitioner looking to incorporate AI techniques to build smart IoT solutions without having to trawl through a lot of AI theory, this AI IoT book is for you. Data scientists and AI developers who want to build IoT-focused AI solutions will also find this book useful. Knowledge of the Python programming language and basic IoT concepts is required to grasp the concepts covered in this artificial intelligence book more effectively.

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