Data Science On The Google Cloud Platform Implementing End To End Real Time Data Pipelines From Ingest To Machine Learning

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Practical Java Machine Learning - Mark Wickham 2018-10-23
Build machine learning (ML) solutions for Java development. This book shows you that when designing ML apps, data is the key driver and must be considered throughout all phases of the

project life cycle. Practical Java Machine Learning helps you understand the importance of data and how to organize it for use within your ML project. You will be introduced to tools which can help you identify and manage your data including JSON, visualization, NoSQL databases, and cloud platforms including Google Cloud Platform and Amazon Web Services. Practical Java Machine Learning includes multiple projects, with particular focus on the Android mobile platform and features such as sensors, camera, and connectivity, each of which produce data that can power unique machine learning solutions. You will learn to build a variety of applications that demonstrate the capabilities of the Google Cloud Platform machine learning API, including data visualization for Java; document classification using the Weka ML environment; audio file classification for Android using ML with spectrogram voice data; and machine learning using device sensor data. After reading this book, you will come away with case study examples and projects that you can take away as templates for re-use and exploration for your own machine learning programming projects with Java. What You Will LearnIdentify, organize, and architect the data required for ML projects Deploy ML solutions in conjunction with cloud providers such as Google and Amazon Determine which algorithm is the most appropriate for a specific ML problem Implement Java ML solutions on Android mobile devices Create Java ML solutions to work with sensor data Build Java streaming based solutionsWho This Book Is For Experienced Java developers who have not implemented machine learning techniques before.

Secure Data Science - Bhavani Thuraisingham 2022-04-20

Secure data science, which integrates cyber security and data science, is becoming one of the critical areas in both cyber security and data science. This is because the novel data science techniques being developed have applications in solving such cyber security problems as intrusion detection, malware analysis, and insider threat detection. However, the data science techniques being applied not only for cyber security but also for every application area—including healthcare, finance, manufacturing, and marketing—could be attacked by malware. Furthermore, due to the power of data science, it is now possible to infer highly private and sensitive information from public data, which could result in the violation of individual privacy. This is the first such book that provides a comprehensive overview of integrating both cyber security and data science and discusses both theory and practice in secure data science. After an overview of security and privacy for big data services as well as cloud computing, this book describes applications of data science for cyber security applications. It also discusses such applications of data science as malware analysis and insider threat detection. Then this book addresses trends in adversarial machine learning and provides solutions to the attacks on the data science techniques. In particular, it discusses some emerging trends in carrying out trustworthy analytics so that the analytics techniques can be secured against malicious attacks. Then it focuses on the privacy threats due to the collection of massive amounts of data and potential solutions. Following a discussion on the integration of services computing, including cloud-based services for secure data science, it looks at applications of secure data science to information sharing and social media. This book is a useful resource for researchers, software developers, educators, and managers who want to understand both the high level concepts and the technical details on the design and implementation of secure data science-based systems. It can also be used as a reference book for a graduate course in secure data science. Furthermore, this book provides numerous references that would be helpful for the reader to get more details about secure data science.

Build a Career in Data Science - Emily Robinson 2020-03-06

Summary You are going to need more than technical knowledge to succeed as a data scientist. Build a Career in Data Science teaches you what school leaves out, from how to land your first job to the lifecycle of a data science project, and even how to become a manager. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology What are the keys to a data scientist's long-term success? Blending your technical know-how with the right "soft skills" turns out to be a central ingredient of a rewarding career. About the book Build a Career in Data Science is your guide to landing your first data science job and developing into a valued senior employee. By following clear and simple instructions, you'll learn to craft an amazing resume and ace your interviews. In this demanding, rapidly changing field, it can be challenging to keep projects on track, adapt to company needs, and manage tricky stakeholders. You'll love the insights on how to handle expectations, deal with failures, and plan your career path in the stories from seasoned data scientists included in the book. What's inside Creating a portfolio of data science projects Assessing and negotiating an offer Leaving gracefully and moving up the ladder Interviews with professional data scientists About the reader For readers who want to begin or advance a data science career. About the author Emily Robinson is a data scientist at Warby Parker. Jacqueline Nolis is a data science consultant and mentor. Table of Contents: PART 1 - GETTING STARTED WITH DATA SCIENCE 1. What is data science? 2. Data science companies 3. Getting the skills 4. Building a portfolio PART 2 - FINDING YOUR DATA SCIENCE JOB 5. The search: Identifying the right job for you 6. The application: Résumés and cover letters 7. The interview: What to expect and how to handle it 8. The offer: Knowing what to accept PART 3 - SETTLING INTO DATA SCIENCE 9. The first months on the job 10. Making an effective analysis 11. Deploying a model into production 12. Working with stakeholders PART 4 - GROWING IN YOUR DATA SCIENCE ROLE 13. When your data science project fails 14. Joining the data science community 15. Leaving your job gracefully 16. Moving up the ladder

Machine Learning Design Patterns - Valliappa Lakshmanan 2020-10-15

The design patterns in this book capture best practices and solutions to recurring problems in machine learning. The authors, three Google engineers, catalog proven methods to help data scientists tackle common problems throughout the ML process. These design patterns codify the experience of hundreds of experts into straightforward, approachable advice. In this book, you will find detailed explanations of 30 patterns for data and problem representation, operationalization, repeatability, reproducibility, flexibility, explainability, and fairness. Each pattern includes a description of the problem, a variety of potential solutions, and recommendations for choosing the best technique for your situation. You'll learn how to: Identify and mitigate common challenges when training, evaluating, and deploying ML models Represent data for different ML model types, including embeddings, feature crosses, and more Choose the right model type for specific problems Build a robust training loop that uses checkpoints, distribution strategy, and hyperparameter tuning Deploy scalable ML systems that you can retrain and update to reflect new data Interpret model predictions for stakeholders and ensure models are treating users fairly

Official Google Cloud Certified Associate Cloud Engineer Study Guide - Dan Sullivan 2019-04-01

The Only Official Google Cloud Study Guide The Official Google Cloud Certified Associate Cloud

Engineer Study Guide, provides everything you need to prepare for this important exam and master the skills necessary to land that coveted Google Cloud Engineering certification. Beginning with a pre-book assessment quiz to evaluate what you know before you begin, each chapter features exam objectives and review questions, plus the online learning environment includes additional complete practice tests. Written by Dan Sullivan, a popular and experienced online course author for machine learning, big data, and Cloud topics, Official Google Cloud Certified Associate Cloud Engineer Study Guide is your ace in the hole for deploying and managing Google Cloud Services. • Select the right Google service from the various choices based on the application to be built • Compute with Cloud VMs and managing VMs • Plan and deploying storage • Network and configure access and security Google Cloud Platform is a leading public cloud that provides its users to many of the same software, hardware, and networking infrastructure used to power Google services. Businesses, organizations, and individuals can launch servers in minutes, store petabytes of data, and implement global virtual clouds with the Google Cloud Platform. Certified Associate Cloud Engineers have demonstrated the knowledge and skills needed to deploy and operate infrastructure, services, and networks in the Google Cloud. This exam guide is designed to help you understand the Google Cloud Platform in depth so that you can meet the needs of those operating resources in the Google Cloud.

Cloud Analytics with Google Cloud Platform - Sanket Thodge 2018-04-10

Combine the power of analytics and cloud computing for faster and efficient insights Key Features Master the concept of analytics on the cloud: and how organizations are using it Learn the design considerations and while applying a cloud analytics solution Design an end-to-end analytics pipeline on the cloud Book Description

With the ongoing data explosion, more and more organizations all over the world are slowly migrating their infrastructure to the cloud. These cloud platforms also provide their distinct analytics services to help you get faster insights from your data. This book will give you an introduction to the concept of analytics on the cloud, and the different cloud services popularly used for processing and analyzing data. If you're planning to adopt the cloud analytics model for your business, this book will help you understand the design and business considerations to be kept in mind, and choose the best tools and alternatives for analytics, based on your requirements. The chapters in this book will take you through the 70+ services available in Google Cloud Platform and their implementation for practical purposes. From ingestion to processing your data, this book contains best practices on building an end-to-end analytics pipeline on the cloud by leveraging popular concepts such as machine learning and deep learning. By the end of this book, you will have a better understanding of cloud analytics as a concept as well as a practical know-how of its implementation What you will learn Explore the basics of cloud analytics and the major cloud solutions Learn how organizations are using cloud analytics to improve the ROI Explore the design considerations while adopting cloud services Work with the ingestion and storage tools of GCP such as Cloud Pub/Sub Process your data with tools such as Cloud Dataproc, BigQuery, etc Over 70 GCP tools to build an analytics engine for cloud analytics Implement machine learning and other AI techniques on GCP Who this book is for This book is targeted at CIOs, CTOs, and even analytics professionals looking for various alternatives to implement their analytics pipeline on the cloud. Data professionals looking to get started with cloud-based analytics will also find this book useful. Some basic exposure to cloud platforms such as GCP will be helpful, but not mandatory.

The the Data Science Workshop - Anthony So 2020-01-28

Cut through the noise and get real results with a step-by-step approach to data science Key Features Ideal for the data science beginner who is getting started for the first time A data science tutorial with step-by-step exercises and activities that help build key skills Structured to let you progress at your own pace, on your own terms Use your physical print copy to redeem free access to the online interactive edition Book Description You already know you want to learn data science, and a smarter way to learn data science is to learn by doing. The Data Science Workshop focuses on building up your practical skills so that you can understand how to develop simple machine learning models in Python or even build an advanced model for detecting potential bank frauds with effective modern data science. You'll learn from real examples that lead to real results. Throughout The Data Science Workshop, you'll take an engaging step-by-step approach to understanding data science. You won't have to sit through any unnecessary theory. If you're short on time you can jump into a single exercise each day or spend an entire weekend training a model using sci-kit learn. It's your choice. Learning on your terms, you'll build up and reinforce key skills in a way that feels rewarding. Every physical print copy of The Data Science Workshop unlocks access to the interactive edition. With videos detailing all exercises and activities, you'll always have a guided solution. You can also benchmark yourself against assessments, track progress, and receive content updates. You'll even earn a secure credential that you can share and verify online upon completion. It's a premium learning experience that's included with your printed copy. To redeem, follow the instructions located at the start of your data science book. Fast-paced and direct, The Data Science Workshop is the ideal companion for data science beginners. You'll learn about machine learning algorithms like a data scientist, learning along the way. This process means that you'll find that your new skills stick, embedded as best practice. A solid foundation for the years ahead. What you will learn Find out the key differences between supervised and unsupervised learning Manipulate and analyze data using scikit-learn and pandas libraries Learn about different algorithms such as regression, classification, and clustering Discover advanced techniques to improve model ensembling and accuracy Speed up the process of creating new features with automated feature tool Simplify machine learning using open source Python packages Who this book is for Our goal at Packt is to help you be successful, in whatever it is you choose to do. The Data Science Workshop is an ideal data science tutorial for the data science beginner who is just getting started. Pick up a Workshop today and let Packt help you develop skills that stick with you for life.

Up and Running Google AutoML and AI Platform: Building Machine Learning and NLP Models Using AutoML and AI Platform for Production Environment (English Edition) - Navin Sabharwal 2021-01-05

A step-by-step guide to build machine learning and NLP models using Google AutoML KEY FEATURES •Understand the basic concepts of Machine Learning and Natural Language Processing •Understand the basic concepts of Google AutoML, AI Platform, and Tensorflow •Explore the Google AutoML Natural Language service •Understand how to implement NLP models like Issue Categorization Systems using AutoML •Understand how to release the features of AutoML models as REST APIs for other applications •Understand how to implement the NLP models using the Google AI Platform DESCRIPTION Google AutoML and AI Platform provide an innovative way to build an AI-based system with less effort. In this book, you will learn about the basic concepts of Machine Learning and Natural Language

Processing. You will also learn about the Google AI services such as AutoML, AI Platform, and Tensorflow, Google's deep learning library, along with some practical examples using these services in real-life scenarios. You will also learn how the AutoML Natural Language service and AI Platform can be used to build NLP and Machine Learning models and how their features can be released as REST APIs for other applications. In this book, you will also learn the usage of Google's BigQuery, DataPrep, and DataProc for building an end-to-end machine learning pipeline. This book will give you an in-depth knowledge of Google AutoML and AI Platform by implementing real-life examples such as the Issue Categorization System, Sentiment Analysis, and Loan Default Prediction System. This book is relevant to the developers, cloud enthusiasts, and cloud architects at the beginner and intermediate levels. WHAT YOU WILL LEARN By the end of this book, you will learn how Google AutoML, AI Platform, BigQuery, DataPrep, and Dapaproc can be used to build an end-to-end machine learning pipeline. You will also learn how different types of AI problems can be solved using these Google AI services. A step-by-step implementation of some common NLP problems such as the Issue Categorization System and Sentiment Analysis System that provide you with hands-on experience in building complex AI-based systems by easily leveraging the GCP AI services. WHO IS THIS BOOK FOR This book is for machine learning engineers, NLP users, and data professionals who want to develop and streamline their ML models and put them into production using Google AI services. Prior knowledge of python programming and the basics of machine learning would be preferred. TABLE OF CONTENTS 1. Introduction to Artificial Intelligence 2. Introducing the Google Cloud Platform 3. AutoML Natural Language 4. Google AI Platform 5. Google Data Analysis, Preparation, and Processing Services AUTHOR

BIO Navin Sabharwal: Navin is an innovator, leader, author, and consultant in AI and Machine Learning, Cloud Computing, Big Data Analytics, Software Product Development, Engineering, and R&D. He has authored books on technologies such as GCP, AWS, Azure, AI and Machine Learning systems, IBM Watson, chef, GKE, Containers, and Microservices. He is reachable at Navinsabharwal@gmail.com. Amit Agrawal: Amit holds a master's degree in Computer Science and Engineering from MNNIT (Motilal Nehru National Institute of Technology, Allahabad), one of the premier institutes of Engineering in India. He is working as a principal Data Scientist and researcher, delivering solutions in the fields of AI and Machine Learning. He is responsible for designing end-to-end solutions and architecture for enterprise products. He is reachable at agrawal.amit24@gmail.com.

Pragmatic AI - Noah Gift 2018-07-12

Master Powerful Off-the-Shelf Business Solutions for AI and Machine Learning Pragmatic AI will help you solve real-world problems with contemporary machine learning, artificial intelligence, and cloud computing tools. Noah Gift demystifies all the concepts and tools you need to get results—even if you don't have a strong background in math or data science. Gift illuminates powerful off-the-shelf cloud offerings from Amazon, Google, and Microsoft, and demonstrates proven techniques using the Python data science ecosystem. His workflows and examples help you streamline and simplify every step, from deployment to production, and build exceptionally scalable solutions. As you learn how machine language (ML) solutions work, you'll gain a more intuitive understanding of what you can achieve with them and how to maximize their value. Building on these fundamentals, you'll walk step-by-step through building cloud-based AI/ML applications to address realistic issues in sports marketing, project management, product pricing, real estate, and beyond. Whether you’re a business professional, decision-maker, student, or programmer, Gift’s expert guidance and wide-ranging case studies will prepare you to solve data science problems in virtually any environment. Get and configure all the tools you’ll need Quickly review all the Python you need to start building machine learning applications Master the AI and ML toolchain and project lifecycle Work with Python data science tools such as IPython, Pandas, Numpy, Juypter Notebook, and Sklearn Incorporate a pragmatic feedback loop that continually improves the efficiency of your workflows and systems Develop cloud AI solutions with Google Cloud Platform, including TPU, Colaboratory, and Datalab services Define Amazon Web Services cloud AI workflows, including spot instances, code pipelines, boto, and more Work with Microsoft Azure AI APIs Walk through building six real-world AI applications, from start to finish Register your book for convenient access to downloads, updates, and/or corrections as they become available. See inside book for details.

Practical AI on the Google Cloud Platform - Micheal Lanham 2020-12-08

AI is complicated, but cloud providers have stepped in to make it easier, offering free (or affordable) state-of-the-art models and training tools to get you started. In this book, AI novices will learn how to use Google's AI-powered cloud services to do everything from analyzing text, images, and video to creating a chatbot. Author Micheal Lanham takes you step-by-step through building models, training them, and then expanding on them to accomplish increasingly complex tasks. If you have a good grasp of math and the Python language, this book will get you up and running with Google Cloud Platform, whether you're looking to build a simple business AI application or an AI assistant. Learn key concepts for data science, machine learning, and deep learning Explore tools like Video AI, AutoML Tables, the Cloud Inference API, the

Recommendations AI API, and BigQuery ML Perform image recognition using CNNs, transfer learning, and GANs Build a simple language processor using embeddings, RNNs, and Bidirectional Encoder Representations from Transformers (BERT) Use Dialogflow to build a chatbot Analyze video with automatic video indexing, face detection, and TF Hub

The the Data Science Workshop - Anthony So 2020-08-28

Gain expert guidance on how to successfully develop machine learning models in Python and build your own unique data platforms Key Features Gain a full understanding of the model production and deployment process Build your first machine learning model in just five minutes and get a hands-on machine learning experience Understand how to deal with common challenges in data science projects Book Description Where there's data, there's insight. With so much data being generated, there is immense scope to extract meaningful information that'll boost business productivity and profitability. By learning to convert raw data into game-changing insights, you'll open new career paths and opportunities. The Data Science Workshop begins by introducing different types of projects and showing you how to incorporate machine learning algorithms in them. You'll learn to select a relevant metric and even assess the performance of your model. To tune the hyperparameters of an algorithm and improve its accuracy, you'll get hands-on with approaches such as grid search and random search. Next, you'll learn dimensionality reduction techniques to easily handle many variables at once, before exploring how to use model ensembling techniques and create new features to enhance model performance. In a bid to help you automatically create new features that improve your model, the book demonstrates how to use the automated feature engineering tool. You'll also understand how to use the orchestration and scheduling workflow to deploy machine learning models in batch. By the end of this book, you'll have the skills to start working on data science projects confidently. By the end of this book, you'll have the skills to start working on data science projects confidently. What you will learn Explore the key differences between supervised learning and unsupervised learning Manipulate and analyze data using scikit-learn and pandas libraries Understand key concepts such as regression, classification, and clustering Discover advanced techniques to improve the accuracy of your model Understand how to speed up the process of adding new features Simplify your machine learning workflow for production Who this book is for This is one of the most useful data science books for aspiring data analysts, data scientists, database engineers, and business analysts. It is aimed at those who want to kick-start their careers in data science by quickly learning data science techniques without going through all the mathematics behind machine learning algorithms. Basic knowledge of the Python programming language will help you easily grasp the concepts explained in this book.

Data Science Thinking - Longbing Cao
2018-08-17

This book explores answers to the fundamental questions driving the research, innovation and practices of the latest revolution in scientific, technological and economic development: how does data science transform existing science, technology, industry, economy, profession and education? How does one remain competitive in the data science field? What is responsible for shaping the mindset and skillset of data scientists? Data Science Thinking paints a comprehensive picture of data science as a new scientific paradigm from the scientific evolution perspective, as data science thinking from the scientific-thinking perspective, as a trans-disciplinary science from the disciplinary perspective, and as a new profession and economy from the business perspective.

Data Analytics with Google Cloud Platform - Murari Ramuka 2019-12-16

Step-by-step guide to different data movement and processing techniques, using Google Cloud Platform Services DESCRIPTION Modern businesses are awash with data, making data-driven decision-making tasks increasingly complex. As a result, relevant technical expertise and analytical skills are required to do such tasks. This book aims to equip you with enough knowledge of Cloud Computing in conjunction with Google Cloud Data platform to succeed in the role of a Cloud data expert. The current market is trending towards the latest cloud technologies, which is the need of the hour. Google being the pioneer, is dominating this space with the right set of cloud services being offered as part of GCP (Google Cloud Platform). At this juncture, this book will be very vital and will cover all the services that are being offered by GCP, putting emphasis on Data services. This book starts with sophisticated knowledge on Cloud Computing. It also explains different types of data services/technology and machine learning algorithm/Pre-Trained API through real-business problems, which are built on the Google Cloud Platform (GCP). With some of the latest business examples and hands-on guide, this book will enable the developers entering the data analytics fields to implement an end-to-end data pipeline, using GCP Data services. Through the course of the book, you will come across multiple industry-wise use cases, like Building Datawarehouse using Big Query, a sample real-time data analytics solution on machine learning and Artificial Intelligence that helped with the business decision, by employing a variety of data science approaches on Google Cloud environment. Whether your business is at the early stage of cloud implementation in its journey or well on its way to digital transformation, Google Cloud's solutions and technologies will always help chart a path to success. This book can be used to develop the

GCP concepts in an easy way. It contains many examples showcasing the implementation of a GCP service. It enables the learning of the basic and advance concepts of Google Cloud Data Platform. This book is divided into 7 chapters and provides a detailed description of the core concepts of each of the Data services offered by Google Cloud. KEY FEATURES Learn the basic concept of Cloud Computing along with different Cloud service provides with their supported Models (IaaS/PaaS/SaaS) Learn the basics of Compute Engine, App Engine, Container Engine, Project and Billing setup in the Google Cloud Platform Learn how and when to use Cloud DataFlow, Cloud DataProc and Cloud DataPrep Build real-time data pipeline to support real-time analytics using Pub/Sub messaging service Setting up a fully managed GCP Big Data Cluster using Cloud DataProc for running Apache Spark and Apache Hadoop clusters in a simpler, more cost-efficient manner Learn how to use Cloud Data Studio for visualizing the data on top of Big Query Implement and understand real-world business scenarios for Machine Learning, Data Pipeline Engineering WHAT WILL YOU LEARN By the end of the book, you will have come across different data services and platforms offered by Google Cloud, and how those services/features can be enabled to serve business needs. You will also see a few case studies to put your knowledge to practice and solve business problems such as building a real-time streaming pipeline engine, Scalable Data Warehouse on Cloud, fully managed Hadoop cluster on Cloud and enabling TensorFlow/Machine Learning API's to support real-life business problems. Remember to practice additional examples to master these techniques. WHO IS THIS BOOK FOR This book is for professionals as well as graduates who want to build a career in Google Cloud data analytics technologies. While no prior knowledge of Cloud Computing or related technologies is assumed, it will be helpful to have some data background and experience. One stop shop for those who wish to get an initial to advance understanding of the GCP data platform. The target audience will be data engineers/professionals who are new, as well as those who are acquainted with the tools and techniques related to cloud and data space. ● Individuals who have basic data understanding (i.e. Data and cloud) and have done some work in the field of data analytics, can refer/use this book to master their knowledge/understanding. ● The highlight of this book is that it will start with the basic cloud computing fundamentals and will move on to cover the advance concepts on GCP cloud data analytics and hence can be referred across multiple different levels of audiences. Table of Contents 1. GCP Overview and Architecture 2. Data Storage in GCP 3. Data Processing in GCP with Pub/Sub and Dataflow 4. Data Processing in GCP with DataPrep and Dataflow 5. Big Query and Data Studio 6. Machine Learning with GCP 7. Sample Use cases and Examples

Data Science on the Google Cloud Platform, 2nd Edition - Valliappa Lakshmanan 2023
Learn how easy it is to apply sophisticated statistical and machine learning methods to real-world problems when you build using Google Cloud Platform (GCP). This hands-on guide shows data engineers and data scientists how to implement an end-to-end data pipeline, using statistical and machine learning methods and tools on GCP. Through the course of this updated second edition, you'll work through a sample business decision by employing a variety of data science approaches. Follow along by implementing these statistical and machine learning solutions in your own project on GCP, and discover how this platform provides a transformative and more collaborative way of doing data science. You'll learn how to: Employ best practices in building highly scalable data and ML pipelines on Google Cloud Automate and schedule data ingest using Cloud Run Create

and populate a dashboard in Data Studio Build a real-time analytics pipeline using Pub/Sub, Dataflow, and BigQuery Conduct interactive data exploration with BigQuery Create a Bayesian model with Spark on Cloud Dataproc Forecast time series and do anomaly detection with BigQuery ML Aggregate within time windows with Dataflow Train explainable machine learning models with Vertex AI Operationalize ML with Vertex AI Pipelines.

Hands-On Machine Learning on Google Cloud Platform - Giuseppe Ciaburro
2018-04-30

Unleash Google's Cloud Platform to build, train and optimize machine learning models Key Features Get well versed in GCP pre-existing services to build your own smart models A comprehensive guide covering aspects from data processing, analyzing to building and training ML models A practical approach to produce your trained ML models and port them to your mobile for easy access Book Description Google Cloud Machine Learning Engine combines the services of Google Cloud Platform with the power and flexibility of TensorFlow. With this book, you will not only learn to build and train different complexities of machine learning models at scale but also host them in the cloud to make predictions. This book is focused on making the most of the Google Machine Learning Platform for large datasets and complex problems. You will learn from scratch how to create powerful machine learning based applications for a wide variety of problems by leveraging different data services from the Google Cloud Platform. Applications include NLP, Speech to text, Reinforcement learning, Time series, recommender systems, image classification, video content inference and many other. We will implement a wide variety of deep learning use cases and also make extensive use of data related services comprising the Google Cloud Platform ecosystem such as Firebase, Storage APIs, Datalab and so forth. This will enable you to integrate Machine Learning and data processing features into your web and mobile applications. By the end of this book, you will know the main difficulties that you may encounter and get appropriate strategies to overcome these difficulties and build efficient systems. What you will learn Use Google Cloud Platform to build data-based applications for dashboards, web, and mobile Create, train and optimize deep learning models for various data science problems on big data Learn how to leverage BigQuery to explore big datasets Use Google's pre-trained TensorFlow models for NLP, image, video and much more Create models and architectures for Time series, Reinforcement Learning, and generative models Create, evaluate, and optimize TensorFlow and Keras models for a wide range of applications Who this book is for This book is for data scientists, machine learning developers and AI developers who want to learn Google Cloud Platform services to build machine learning applications. Since the interaction with the Google ML platform is mostly done via the command line, the reader is supposed to have some familiarity with the bash shell and Python scripting. Some understanding of machine learning and data science concepts will be handy

Data Science on the Google Cloud Platform - Valliappa Lakshmanan 2017-12-12

Learn how easy it is to apply sophisticated statistical and machine learning methods to real-world problems when you build on top of the Google Cloud Platform (GCP). This hands-on guide shows developers entering the data science field how to implement an end-to-end data pipeline, using statistical and machine learning methods and tools on GCP. Through the course of the book, you'll work through a sample business decision by employing a variety of data science approaches. Follow along by implementing these statistical and machine learning solutions in your own project on GCP, and discover how this platform provides a transformative and more collaborative way of doing data science. You'll learn how to: Automate and schedule data ingest, using an App Engine application Create and populate a dashboard in Google Data Studio Build a real-time analysis pipeline to carry out streaming analytics Conduct interactive data exploration with Google BigQuery Create a Bayesian model on a Cloud Dataproc cluster Build a logistic regression machine-learning model with Spark Compute time-aggregate features with a Cloud Dataflow pipeline Create a high-performing prediction model with TensorFlow Use your deployed model as a microservice you can access from both batch and real-time pipelines

Visualizing Google Cloud - Priyanka Vergadia 2022-04-12

Easy-to-follow visual walkthrough of every important part of the Google Cloud Platform The Google Cloud Platform incorporates dozens of specialized services that enable organizations to offload technological needs onto the cloud. From routine IT operations like storage to sophisticated new capabilities including artificial intelligence and machine learning, the Google Cloud Platform offers enterprises the opportunity to scale and grow efficiently. In Visualizing Google Cloud: Illustrated References for Cloud Engineers & Architects, Google cloud expert Priyanka Vergadia delivers a fully illustrated, visual guide to matching the best Google Cloud Platform services to your own unique use cases. After a brief introduction to the major categories of cloud services offered by Google, the author offers approximately 100 solutions divided into eight categories of services included in Google Cloud Platform: Compute Storage Databases Data Analytics Data Science, Machine Learning and Artificial Intelligence Application Development and Modernization with Containers Networking Security You'll find richly illustrated flowcharts and decision diagrams with straightforward explanations in each category, making it easy to adopt and adapt Google’s cloud services to your use cases. With coverage of the major categories of cloud models—including infrastructure-, containers-, platforms-, functions-, and serverless—and discussions of storage types, databases and Machine Learning choices, Visualizing Google Cloud: Illustrated References for Cloud Engineers & Architects is perfect for Every Google Cloud enthusiast, of course. It is for anyone who is planning a cloud migration or new cloud deployment. It is for anyone preparing for cloud certification, and for anyone looking to make the most of Google Cloud. It is for cloud solutions architects, IT decision-makers, and cloud data and ML engineers. In short, this book is for YOU.

Google Cloud Platform Administration - Ranjit Singh Thakurratan 2018-09-29

Make the most of GCP’s offerings to manage your data center workload and optimize deployments Key FeaturesDiscover new techniques to administer, manage, and deploy applications on GCPUnderstand effective solutions for storing, retrieving, and deploying your container imagesExplore various offerings of GCP for operations and security Book Description On-premise data centers are costly to manage. If you need a data center but don’t want to deal with a physical one, Google Cloud Platform (GCP) is the solution. With GCP, you can build, test, and deploy applications on Google’s infrastructure. Google Cloud Platform Administration begins with GCP fundamentals, with the help of which you will deploy your first app and gain an understanding of Google Cloud architecture and services. Furthermore, you will learn how to manage Compute, networking, and storage resources. As you make your way through the book, you will learn how to track and manage GCP’s usage, monitoring, and billing access control. You will also be able to manage your GCP's access and permissions. In the concluding chapters, you will explore a list of different developer tools for managing and interacting with the GCP platform. By the end of this book, you will have learned how to effectively deploy workloads on GCP. What you will learnUnderstand all GCP Compute componentsDeploy and manage multiple GCP storage optionsManage and utilize the networking resources offered by GCPExplore the functionalities and features of the GCP Container Understand the workings of GCP operations such as monitoring and error reporting Discover an immune GCP using its identity and security optionsWho this book is for Google Cloud Platform Administration is for administrators, cloud architects, and engineers who want to leverage the upcoming Google Cloud Platform. Some basic understanding of cloud computing will be useful.

Google Cloud Certified Professional Cloud Architect Study Guide - Dan Sullivan

2022-06-21

An indispensable guide to the newest version of the Google Certified Professional Cloud Architect certification The newly revised Second Edition of the Google Cloud Certified Professional Cloud Architect Study Guide delivers a proven and effective roadmap to success on the latest Professional Cloud Architect accreditation exam from Google. You'll learn the skills you need to excel on the test and in the field, with coverage of every exam objective and competency, including focus areas of the latest exam such as Kubernetes, Anthos, and multi-cloud architectures. The book explores the design, analysis, development, operations, and migration components of the job, with intuitively organized lessons that align with the real-world job responsibilities of a Google Cloud professional and with the PCA exam topics. Architects need more than the ability to recall facts about cloud services, they need to be able to reason about design decisions. This study guide is unique in how it helps you learn to think like an architect: understand requirements, assess constraints, choose appropriate architecture patterns, and consider the operational characteristics of the systems you design. Review questions and practice exams use scenario-based questions like those on the certification exam to build the test taking skills you will need. In addition to comprehensive material on compute resources, storage systems, networks, security, legal and regulatory compliance, reliability design, technical and business processes, and more, you'll get: The chance to begin or advance your career as an in-demand Google Cloud IT professional Invaluable opportunities to develop and practice the skills you'll need as a Google Cloud Architect Access to the Sybex online learning center, with chapter review questions, full-length practice exams, hundreds of electronic flashcards, and a glossary of key terms The ideal resource for anyone preparing for the Professional Cloud Architect certification from Google, Google Cloud Certified Professional Cloud Architect Study Guide, 2nd Edition is also a must-read resource for aspiring and practicing cloud professionals seeking to expand or improve their technical skillset and improve their effectiveness in the field.

Building Machine Learning and Deep Learning Models on Google Cloud Platform - Ekaba Bisong 2019-09-27

Take a systematic approach to understanding the fundamentals of machine learning and deep learning from the ground up and how they are applied in practice. You will use this comprehensive guide for building and deploying learning models to address complex use cases while leveraging the computational resources of Google Cloud Platform. Author Ekaba Bisong shows you how machine learning tools and techniques are used to predict or classify events based on a set of interactions between variables known as features or attributes in a particular dataset. He teaches you how deep learning extends the machine learning algorithm of neural networks to learn complex tasks that are difficult for computers to perform, such as recognizing faces and understanding languages. And you will know how to leverage cloud computing to accelerate data science and machine learning deployments. Building Machine Learning and Deep Learning Models on Google Cloud Platform is divided into eight parts that cover the fundamentals of machine learning and deep learning, the concept of data science and cloud services, programming for data science using the Python stack, Google Cloud Platform (GCP) infrastructure and products, advanced analytics on GCP, and deploying end-to-end machine learning solution pipelines on GCP. What You'll Learn Understand the principles and fundamentals of machine learning and deep learning, the algorithms, how to use them, when to use them, and how to interpret your resultsKnow the programming concepts relevant to machine and deep learning design and development using the Python stack Build and interpret machine and deep learning models Use Google Cloud Platform tools and services to develop and deploy large-scale machine learning and deep learning products Be aware of the different facets and design choices to consider when modeling a learning problem Productionalize machine learning models into software products Who This Book Is For Beginners to the practice of data science and applied machine learning, data scientists at all levels, machine learning engineers, Google Cloud Platform data engineers/architects, and software developers

Practical Data Science with SAP - Greg Foss 2019-09-18

Learn how to fuse today's data science tools and techniques with your SAP enterprise resource planning (ERP) system. With this practical guide, SAP veterans Greg Foss and Paul Modderman demonstrate how to use several data analysis tools to solve interesting problems with your SAP data. Data engineers and scientists will explore ways to add SAP data to their analysis processes, while SAP business analysts will learn practical methods for answering questions about the business. By focusing on grounded explanations of both SAP processes and data science tools, this book gives data scientists and business analysts powerful methods for discovering deep data truths. You'll explore: Examples of how data analysis can help you solve several SAP challenges Natural language processing for unlocking the secrets in text Data science techniques for data clustering and segmentation Methods for detecting anomalies in your SAP data Data visualization techniques for making your data come to life

Python Programming, Deep Learning - Anthony Adams 2021-12-17

Easily Boost Your Skills In Python Programming & Become A Master In Deep Learning & Data Analysis! Python is an interpreted, high-level, general-purpose programming language that emphasizes code readability with its notable use of significant whitespace. What makes Python so popular in the IT industry is that it uses an object-oriented approach, which enables programmers to write clear, logical code for all types of projects, whether big or small. Hone your Python Programming skills and gain a sharp edge over other programmers the EASIEST way possible... with this practical beginner’s guide! In his 3-in-1 Python crash course for beginners, Anthony Adams gives novices like you simple, yet efficient tips and tricks to become a MASTER in Python coding for artificial intelligence, neural networks, machine learning, and data science/analysis! Here’s what you’ll get: Highly innovative ways to boost your understanding of Python programming, data analysis, and machine learning Quickly and effectively stop fraud with machine learning Practical and efficient exercises that make understanding Python quick & easy And so much more! As a beginner, you might feel a bit intimidated by the complexities of coding. Add the fact that most Python Programming crash course guides make learning harder than it has to be! With the help of this 3-in-1 guide, you will be given carefully sequenced Python Programming lessons that’ll maximize your understanding, and equip you with all the skills for real-life application! Thrive in the IT industry with this comprehensive Python Programming crash course! Scroll up, Click on “Buy Now”, and Start Learning Today!

Journey to Become a Google Cloud Machine Learning Engineer - Dr. Logan Song
2022-09-20

Prepare for the GCP ML certification exam along with exploring cloud computing and machine learning concepts and gaining Google Cloud ML skills Key Features A comprehensive yet easy-to-follow Google Cloud machine learning study guide Explore full-spectrum and step-by-step practice examples to develop hands-on skills Read through and learn from in-depth discussions of Google ML certification exam questions Book Description This book aims to provide a study guide to learn and master machine learning in Google Cloud: to build a broad and strong knowledge base, train hands-on skills, and get certified as a Google Cloud Machine Learning Engineer. The book is for someone who has the basic Google Cloud Platform (GCP) knowledge and skills, and basic Python programming skills, and wants to learn machine learning in GCP to take their next step toward becoming a Google Cloud Certified Machine Learning professional. The book starts by laying the foundations of Google Cloud Platform and Python programming, followed the by building blocks of machine learning, then focusing on machine learning in Google Cloud, and finally ends the studying for the Google Cloud Machine Learning certification by integrating all the knowledge and skills together. The book is based on the graduate courses the author has been teaching at the University of Texas at Dallas. When going through the chapters, the reader is expected to study the concepts, complete the exercises, understand and practice the labs in the appendices, and study each exam question thoroughly. Then, at the end of the learning journey, you can expect to harvest the knowledge, skills, and a certificate. What you will learn Provision Google Cloud services related to data science and machine learning Program with the Python programming language and data science libraries Understand machine learning concepts and model development processes Explore deep learning concepts and neural networks Build, train, and deploy ML models with Google BigQuery ML, Keras, and Google Cloud Vertex AI Discover the Google Cloud ML Application Programming Interface (API) Prepare to achieve Google Cloud Professional Machine Learning Engineer certification Who this book is for Anyone from the cloud computing, data analytics, and machine learning domains, such as cloud engineers, data scientists, data engineers, ML practitioners, and engineers, will be able to acquire the knowledge and skills and achieve the Google Cloud professional ML Engineer certification with this study guide. Basic knowledge of Google Cloud Platform and Python programming is required to get the most out of this book.

Data Engineering with Google Cloud Platform - Adi Widjaja 2022-03-31

Build and deploy your own data pipelines on GCP, make key architectural decisions, and gain the confidence to boost your career as a data engineer Key Features: Understand data engineering concepts, the role of a data engineer, and the benefits of using GCP for building your solution Learn how to use the various GCP products to ingest, consume, and transform data and orchestrate pipelines Discover tips to prepare for and pass the Professional Data Engineer exam Book Description: With this book, you'll understand how the highly scalable Google Cloud Platform (GCP) enables data engineers to create end-to-end data pipelines right from storing and processing data and workflow orchestration to presenting data through visualization dashboards. Starting with a quick overview of the fundamental concepts of data engineering, you'll learn the various responsibilities of a data engineer and how GCP plays a vital role in fulfilling those responsibilities. As you progress through the chapters, you'll be able to leverage GCP products to build a sample data warehouse using Cloud Storage and BigQuery and a data lake using Dataproc. The book gradually takes you through operations such as data ingestion, data cleansing, transformation, and integrating data with other sources. You'll learn how to design IAM for data governance, deploy ML pipelines with the Vertex AI, leverage pre-built GCP models as a service, and visualize data with Google Data Studio to build compelling reports. Finally, you'll find tips on how to boost your career as a data engineer, take the Professional Data Engineer certification exam, and get ready to become an expert in data engineering with GCP. By the end of this data engineering book, you'll have developed the skills to perform core data engineering tasks and build efficient ETL data pipelines with GCP. What You Will Learn: Load data into BigQuery and materialize its output for downstream consumption Build data pipeline orchestration using Cloud Composer Develop Airflow jobs to orchestrate and automate a data warehouse Build a Hadoop data lake, create ephemeral clusters, and run jobs on the Dataproc cluster Leverage Pub/Sub for messaging and ingestion for event-driven systems Use Dataflow to perform ETL on streaming data Unlock the power of your data with Data Studio Calculate the GCP cost estimation for your end-to-end data solutions Who this book is for: This book is for data engineers, data analysts, and anyone looking to design and manage data processing pipelines using GCP. You'll find this book useful if you are preparing to take Google's Professional Data

Engineer exam. Beginner-level understanding of data science, the Python programming language, and Linux commands is necessary. A basic understanding of data processing and cloud computing, in general, will help you make the most out of this book.

Continuous Machine Learning with Kubeflow - Aniruddha Choudhury 2021-11-20 An insightful journey to MLOps, DevOps, and Machine Learning in the real environment. KEY FEATURES ● Extensive knowledge and concept explanation of Kubernetes components with examples. ● An all-in-one knowledge guide to train and deploy ML pipelines using Docker and Kubernetes. ● Includes numerous MLOps projects with access to proven frameworks and the use of deep learning concepts. DESCRIPTION 'Continuous Machine Learning with Kubeflow' introduces you to the modern machine learning infrastructure, which includes Kubernetes and the Kubeflow architecture. This book will explain the fundamentals of deploying various AI/ML use cases with TensorFlow training and serving with Kubernetes and how Kubernetes can help with specific projects from start to finish. This book will help demonstrate how to use Kubeflow components, deploy them in GCP, and serve them in production using real-time data prediction. With Kubeflow KFserving, we'll look at serving techniques, build a computer vision-based user interface in streamlit, and then deploy it to the Google cloud platforms, Kubernetes and Heroku. Next, we also explore how to build Explainable AI for determining fairness and biasness with a What-if tool. Backed with various use-cases, we will learn how to put machine learning into production, including training and serving. After reading this book, you will be able to build your ML projects in the cloud using Kubeflow and the latest technology. In addition, you will gain a solid knowledge of DevOps and MLOps, which will open doors to various job roles in companies. WHAT YOU WILL LEARN ● Get comfortable with the architecture and the orchestration of Kubernetes. ● Learn to containerize and deploy from scratch using Docker and Google Cloud Platform. ● Practice how to develop the Kubeflow Orchestrator pipeline for a TensorFlow model. ● Create AWS SageMaker pipelines, right from training to deployment in production. ● Build the TensorFlow Extended (TFX) pipeline for an NLP application using Tensorboard and TFMA. WHO THIS BOOK IS FOR This book is for MLOps, DevOps, Machine Learning Engineers, and Data Scientists who want to continuously deploy machine learning pipelines and manage them at scale using Kubernetes. The readers should have a strong background in machine learning and some knowledge of Kubernetes is required. TABLE OF CONTENTS 1. Introduction to Kubeflow & Kubernetes Cloud Architecture 2. Developing Kubeflow Pipeline in GCP 3. Designing Computer Vision Model in Kubeflow 4. Building TFX Pipeline 5. ML Model Explainability & Interpretability 6. Building Weights & Biases Pipeline Development 7. Applied ML with AWS Sagemaker 8. Web App Development with Streamlit & Heroku

Deploy Machine Learning Models to Production - Pramod Singh 2020-12-15

Build and deploy machine learning and deep learning models in production with end-to-end examples. This book begins with a focus on the machine learning model deployment process and its related challenges. Next, it covers the process of building and deploying machine learning models using different web frameworks such as Flask and Streamlit. A chapter on Docker follows and covers how to package and containerize machine learning models. The book also illustrates how to build and train machine learning and deep learning models at scale using Kubernetes. The book is a good starting point for people who want to move to the next level of machine learning by taking pre-built models and deploying them into production. It also offers guidance to those who want to move beyond Jupyter notebooks to training models at scale on cloud environments. All the code presented in the book is available in the form of Python scripts for you to try the examples and extend them in interesting ways. What You Will Learn Build, train, and deploy machine learning models at scale using Kubernetes Containerize any kind of machine learning model and run it on any platform using Docker Deploy machine learning and deep learning models using Flask and Streamlit frameworks Who This Book Is For Data engineers, data scientists, analysts, and machine learning and deep learning engineers

Data Science on the Google Cloud Platform - Valliappa Lakshmanan 2018

Learn how easy it is to apply sophisticated statistical and machine learning methods to real-world problems when you build on top of the Google Cloud Platform (GCP). This hands-on guide shows developers entering the data science field how to implement an end-to-end data pipeline, using statistical and machine learning methods and tools on GCP. Through the course of the book, you'll work through a sample business decision by employing a variety of data science approaches. Follow along by implementing these statistical and machine learning solutions in your own project on GCP, and discover how this platform provides a transformative and more collaborative way of doing data science. You'll learn how to: Automate and schedule data ingest, using an App Engine application Create and populate a dashboard in Google Data Studio Build a real-time analysis pipeline to carry out streaming analytics Conduct interactive data exploration with Google BigQuery Create a Bayesian model on a Cloud Dataproc cluster Build a logistic regression machine-learning model with Spark Compute time-aggregate features with a Cloud Dataflow pipeline Create a high-performing prediction model with TensorFlow Use your deployed model as a microservice you can access from both batch and real-time pipelines

Journey to Become a Google Cloud Machine Learning Engineer - Logan Song 2022-09-20 Prepare for the GCP ML certification exam along with exploring cloud computing and machine learning concepts and gaining Google Cloud ML skills Key Features: A comprehensive yet easy-to-follow Google Cloud machine learning study guide Explore full-spectrum and step-by-step practice examples to develop hands-on skills Read through and learn from in-depth discussions of Google ML certification exam questions Book Description: This book aims to provide a study guide to learn and master machine learning in Google Cloud: to build a broad and strong knowledge base, train hands-on skills, and get certified as a Google Cloud Machine Learning Engineer. The book is for someone who has the basic Google Cloud Platform (GCP) knowledge and skills, and basic Python programming skills, and wants to learn machine learning in GCP to take their next step toward becoming a Google Cloud Certified Machine Learning professional. The book starts by laying the foundations of Google Cloud Platform and Python programming, followed the by building blocks of machine learning, then focusing on machine learning in Google Cloud, and finally ends the studying for the Google Cloud Machine Learning certification by integrating all the knowledge and skills together. The book is based on the graduate courses the author has been teaching at the University of Texas at Dallas. When going through the chapters, the reader is expected to study the concepts, complete the exercises, understand and practice the labs in the appendices, and study each exam question thoroughly. Then, at the end of the learning journey, you can expect to harvest the knowledge, skills, and a certificate. What You Will Learn: Provision Google Cloud services related to data science and machine learning Program with the Python programming language and data science libraries Understand machine learning concepts and model development processes Explore deep learning concepts and neural networks Build, train, and deploy ML models with Google BigQuery ML, Keras, and Google Cloud Vertex AI Discover the Google Cloud ML Application Programming Interface (API) Prepare to achieve Google Cloud Professional Machine Learning Engineer certification Who this book is for: Anyone from the cloud computing, data analytics, and machine learning domains, such as cloud engineers, data scientists, data engineers, ML practitioners, and engineers, will be able to acquire the knowledge and skills and achieve the Google Cloud professional ML Engineer certification with this study guide. Basic knowledge of Google Cloud Platform and Python programming is required to get the most out of this book.

Big-Data Analytics for Cloud, IoT and Cognitive Computing - Kai Hwang 2017-03-13

The definitive guide to successfully integrating social, mobile, Big-Data analytics, cloud and IoT principles and technologies The main goal of this book is to spur the development of effective big-data computing operations on smart clouds that are fully supported by IoT sensing, machine learning and analytics systems. To that end, the authors draw upon their original research and proven track record in the field to describe a practical approach integrating big-data theories, cloud design principles, Internet of Things (IoT) sensing, machine learning, data analytics and Hadoop and Spark programming. Part 1 focuses on data science, the roles of clouds and IoT devices and frameworks for big-data computing. Big data analytics and cognitive machine learning, as well as cloud architecture, IoT and cognitive systems are explored, and mobile cloud-IoT-interaction frameworks are illustrated with concrete system design examples. Part 2 is devoted to the principles of and algorithms for machine learning, data analytics and deep learning in big data applications. Part 3 concentrates on cloud programming software libraries from MapReduce to Hadoop, Spark and TensorFlow and describes business, educational, healthcare and social media applications for those tools. The first book describing a practical approach to integrating social, mobile, analytics, cloud and IoT (SMACT) principles and technologies Covers theory and computing techniques and technologies, making it suitable for use in both computer science and electrical engineering programs Offers an extremely well-informed vision of future intelligent and cognitive computing environments integrating SMACT technologies Fully illustrated throughout with examples, figures and approximately 150 problems to support and reinforce learning Features a companion website with an instructor manual and PowerPoint slides www.wiley.com/go/hwangIOT Big-Data Analytics for Cloud, IoT and Cognitive Computing satisfies the demand among university faculty and students for cutting-edge information on emerging intelligent and cognitive computing systems and technologies. Professionals working in data science, cloud computing and IoT applications will also find this book to be an extremely useful working resource.

Practical AI on the Google Cloud Platform - Micheal Lanham 2020

AI is complicated, but cloud providers have stepped in to make it easier, offering free (or affordable) state-of-the-art models and training tools to get you started. In this book, AI novices will learn how to use Google's AI-powered cloud services to do everything from analyzing text, images, and video to creating a chatbot. Author Micheal Lanham takes you step-by-step through building models, training them, and then expanding on them to accomplish increasingly complex tasks. If you have a good grasp of math and the Python language, this book will get you up and running with Google Cloud Platform, whether you're looking to build a simple business AI application or an AI assistant. Learn key concepts for data science, machine learning, and deep learning Explore tools like Video AI, AutoML Tables, the Cloud Inference API, the Recommendations AI API, and BigQuery ML Perform image recognition using CNNs, transfer learning, and GANs Build a simple language processor using embeddings, RNNs, and Bidirectional Encoder Representations from Transformers (BERT) Use Dialogflow to build a chatbot Analyze video with automatic video indexing, face detection, and TF Hub.

The Ultimate Guide to Building a Google Cloud Foundation - Patrick Haggerty 2022-08-26 Follow Google's own ten-step plan to construct a secure, reliable, and extensible foundation for all your Google Cloud base infrastructural needs Key Features Build your foundation in Google Cloud with this clearly laid out, step-by-step guide Get expert advice from one of Google's top trainers Learn to build flexibility and security into your Google Cloud presence from the ground up Book Description From data ingestion and storage, through data processing and data analytics, to application hosting and even machine learning, whatever your IT infrastructural need, there's a good chance that Google Cloud has a service that can help. But instant, self-serve access to a virtually limitless pool of IT resources has its drawbacks. More and more organizations are running into cost overruns, security problems, and simple "why is this not working?" headaches. This book has been written by one of Google's top trainers as a tutorial on how to create your infrastructural foundation in Google Cloud the right way. By following Google's ten-step checklist and Google's security blueprint, you will learn how to set up your initial identity provider and create an organization. Further on, you will configure your users and groups, enable administrative access, and set up billing. Next, you will create a resource hierarchy, configure and control access, and enable a cloud network. Later chapters will guide you through configuring monitoring and logging, adding additional security measures, and enabling a support plan with Google. By the end of this book, you will have an understanding of what it takes to leverage Terraform for properly building a Google Cloud foundational layer that engenders security, flexibility, and extensibility from the ground up. What you will learn Create an organizational resource hierarchy in Google Cloud Configure user access, permissions, and key Google Cloud Platform (GCP) security groups Construct well thought out, scalable, and secure virtual networks Stay informed about the latest logging and monitoring best practices Leverage Terraform infrastructure as code automation to eliminate toil Limit access with IAM policy bindings and organizational policies Implement Google's secure foundation blueprint Who this book is for This book is for anyone looking to implement a secure foundational layer in Google Cloud, including cloud engineers, DevOps engineers, cloud security practitioners, developers, infrastructural management personnel, and other technical leads. A basic understanding of what the cloud is and how it works, as well as a strong desire to build out Google Cloud infrastructure the right way will help you make the most of this book. Knowledge of working in the terminal window from the command line will be beneficial.

BigQuery for Data Warehousing - Mark Mucchetti 2020-12-20

Create a data warehouse, complete with reporting and dashboards using Google’s BigQuery technology. This book takes you from the basic concepts of data warehousing through the design, build, load, and maintenance phases. You will build capabilities to capture data from the operational environment, and then mine and analyze that data for insight into making your business more successful. You will gain practical knowledge about how to use BigQuery to solve data challenges in your organization. BigQuery is a managed cloud platform from Google that provides enterprise data warehousing and reporting capabilities. Part I of this book shows you how to design and provision a data warehouse in the BigQuery platform. Part II teaches you how to load and stream your operational data into the warehouse to make it ready for analysis and reporting. Parts III and IV cover querying and maintaining, helping you keep your information relevant with other Google Cloud Platform services and advanced BigQuery. Part V takes reporting to the next level by showing you how to create dashboards to provide at-a-glance visual representations of your business situation. Part VI provides an introduction to data science with BigQuery, covering machine learning and Jupyter notebooks. What You Will Learn Design a data warehouse for your project or organization Load data from a variety of external and internal sources Integrate other Google Cloud Platform services for more complex workflows Maintain and scale your data warehouse as your organization grows Analyze, report, and create dashboards on the information in the warehouse Become familiar with machine learning techniques using BigQuery ML Who This Book Is For Developers who want to provide business users with fast, reliable, and insightful analysis from operational data, and data analysts interested in a cloud-based solution that avoids the pain of provisioning their own servers.

R for Cloud Computing - A Ohri 2014-11-14

R for Cloud Computing looks at some of the tasks performed by business analysts on the desktop (PC era) and helps the user navigate the wealth of information in R and its 4000 packages as well as transition the same analytics using the cloud. With this information the reader can select both cloud vendors and the sometimes confusing cloud ecosystem as well as the R packages that can help process the analytical tasks with minimum effort, cost and maximum usefulness and customization. The use of

Graphical User Interfaces (GUI) and Step by Step screenshot tutorials is emphasized in this book to lessen the famous learning curve in learning R and some of the needless confusion created in cloud computing that hinders its widespread adoption. This will help you kick-start analytics on the cloud including chapters on both cloud computing, R, common tasks performed in analytics including the current focus and scrutiny of Big Data Analytics, setting up and navigating cloud providers. Readers are exposed to a breadth of cloud computing choices and analytics topics without being buried in needless depth. The included references and links allow the reader to pursue business analytics on the cloud easily. It is aimed at practical analytics and is easy to transition from existing analytical set up to the cloud on an open source system based primarily on R. This book is aimed at industry practitioners with basic programming skills and students who want to enter analytics as a profession. Note the scope of the book is neither statistical theory nor graduate level research for statistics, but rather it is for business analytics practitioners. It will also help researchers and academics but at a practical rather than conceptual level. The R statistical software is the fastest growing analytics platform in the world, and is established in both academia and corporations for robustness, reliability and accuracy. The cloud computing paradigm is firmly established as the next generation of computing from microprocessors to desktop PCs to cloud.

スケーラブルデータサイエンス データエンジニアのための実践**Google Cloud Platform** - ValliappaLakshmanan 2019-06-05

身近な例からデータサイエンスの深淵を体感し スケールさせるノウハウを学ぶ【本書の内容】「膨大なデータを分析して傾向を探り意思決定に援用する」とはよく耳にするフレーズですが、「膨大なデータ」から「援用する」までの間に、どのようなことがなされているのでしょうか。その各段階における必要な知識や技能やツールやインフラにはなにがあるのでしょうか。本書はそういった疑問を、身近な例（フライトスケジュールからミーティングの参加・不参加確定）から説き起こします。とはいえ、それは単に米国運輸省のデータをダウンロードし、フライトの傾向を時間軸に合わせて分析し、スケジュールとして提示する、という“シンプル”なストーリーではありません。「データ分析を実行してビジネスで成果を

出す」ことができる人を「データエンジニア」と呼ぶ、Googleならではの文化が色濃く出た1冊です。すなわち、クエリの構築やレポート、グラフ化が最終目標ではなく、それらをひっくるめたスケーラブルで反復可能なシステムを構築できる人材への足がかりとなる1冊であり、肩書としての「データサイエンティスト」から、真に求められているデータサイエンティストへと、自身をスケールしていくための手引書です。本書は、Valliappa Lakshmanan, "Data Science on the Google Cloud Platform: Implementing End-to-End Real-Time Data Pipelines: From Ingest to Machine Learning", O'Reilly Media, January 12, 2018. の邦訳版です。【本書のポイント】・Google Cloud Platformの具体的な活用方法・データ分析からサービス構築まで、必要な知識・データサイエンスをスケールするという考え方【読者が得られること】・データサイエンスに必要な知識を段階を追って習得できる・データ収集からサービス構築までの一連の流れを理解できる・各ステージにおける勘所や肝となる考え方を学べる・Google Cloud Platformにある一群のツールを使えるようになる・統計学や機械学習を理解していれば、モデルをコード化できるようになる【対象読者】・データエンジニア、データサイエンティスト・データアナリスト、データベース管理者・システムプログラマ

Hands-On Machine Learning on Google Cloud Platform - Giuseppe Ciaburro
2018-04-30

Unleash Google's Cloud Platform to build, train and optimize machine learning models Key Features Get well versed in GCP pre-existing services to build your own smart models A comprehensive guide covering aspects from data processing, analyzing to building and training ML models A practical approach to produce your trained ML models and port them to your mobile for easy access Book Description Google Cloud Machine Learning Engine combines the services of Google Cloud Platform with the power and flexibility of TensorFlow. With this book, you will not only learn to build and train different complexities of machine learning models at scale but also host them in the cloud to make predictions. This book is focused on making the most of the Google Machine Learning Platform for large datasets and complex problems. You will learn from scratch how to create powerful machine learning based applications for a wide variety of problems by leveraging different data services from the Google Cloud Platform. Applications include NLP, Speech to text, Reinforcement learning, Time series, recommender systems, image classification, video content inference and many other. We will implement a wide variety of deep learning use cases and also make extensive use of data related services comprising the Google Cloud Platform ecosystem such as Firebase, Storage APIs, Datalab and so forth. This will enable you to integrate Machine Learning and data processing features into your web and mobile applications. By the end of this book, you will know the main difficulties that you may encounter and get appropriate strategies to overcome these difficulties and build efficient systems. What you will learn Use Google Cloud Platform to build data-based applications for dashboards, web, and mobile Create, train and optimize deep learning models for various data science problems on big data Learn how to leverage BigQuery to explore big datasets Use Google's pre-trained TensorFlow models for NLP, image, video and much more Create models and architectures for Time series, Reinforcement Learning, and generative models Create, evaluate, and optimize TensorFlow and Keras models for a wide range of applications Who this book is for This book is for data scientists, machine learning developers and AI developers who want to learn Google Cloud Platform services to build machine learning applications. Since the interaction with the Google ML platform is mostly done via the command line, the reader is supposed to have some familiarity with the bash shell and Python scripting. Some understanding of machine learning and data science concepts will be handy

Practical AI on the Google Cloud Platform - Micheal Lanham 2020-10-20

Working with AI is complicated and expensive for many developers. That's why cloud providers have stepped in to make it easier, offering free (or affordable) state-of-the-art models and training tools to get you started. With this book, you'll learn how to use Google's AI-powered cloud services to do everything from creating a chatbot to analyzing text, images, and video. Author Micheal Lanham demonstrates methods for building and training models step-by-step and shows you how to expand your models to accomplish increasingly complex tasks. If you have a good grasp of math and the Python language, you'll quickly get up to speed with Google Cloud Platform, whether you want to build an AI assistant or a simple business AI application. Learn key concepts for data science, machine learning, and deep learning Explore tools like Video AI and AutoML Tables Build a simple language processor using deep learning systems Perform image recognition using CNNs, transfer learning, and GANs Use Google's Dialogflow to create chatbots and conversational AI Analyze video with automatic video indexing, face detection, and TensorFlow Hub Build a complete working AI agent application

Official Google Cloud Certified Professional Cloud Architect Study Guide - Dan Sullivan 2019-10-10

Sybex's proven Study Guide format teaches Google Cloud Architect job skills and prepares you for this important new Cloud exam. The Google Cloud Certified Professional Cloud Architect Study Guide is the essential resource for anyone preparing for this highly sought-after, professional-level certification. Clear and accurate chapters cover 100% of exam objectives—helping you gain the knowledge and confidence to succeed on exam day. A pre-book assessment quiz helps you evaluate your skills, while chapter review questions emphasize critical points of learning. Detailed explanations of crucial topics include analyzing and defining technical and business processes, migration planning, and designing storage systems, networks, and compute resources. Written by Dan Sullivan—a well-known author and software architect specializing in analytics, machine learning, and cloud computing—this invaluable study guide includes access to the Sybex interactive online learning environment, which includes complete practice tests, electronic flash cards, a searchable glossary, and more. Providing services suitable for a wide range of applications, particularly in high-growth areas of analytics and machine learning, Google Cloud is rapidly gaining market share in the cloud computing world. Organizations are seeking certified IT professionals with the ability to deploy and operate infrastructure, services, and networks in the Google Cloud. Take your career to the next level by validating your skills and earning certification. Design and plan cloud solution architecture Manage and provision cloud infrastructure Ensure legal compliance and security standards Understand options for implementing hybrid clouds Develop solutions that meet reliability, business, and technical requirements The Google Cloud Certified Professional Cloud Architect Study Guide is a must-have for IT professionals preparing for certification to deploy and manage Google cloud services.

Data Analytics with Google Cloud Platform - Murari Ramuka 2019-12-16
Step-by-step guide to different data movement and processing techniques, using Google Cloud Platform Services DESCRIPTION Modern businesses are awash with data, making data-driven decision-making tasks increasingly complex. As a result, relevant technical expertise and analytical skills are required to do such tasks. This book aims to equip you with enough knowledge of Cloud Computing in conjunction with Google Cloud Data platform to succeed in the role of a Cloud data expert. The current market is trending towards the latest cloud technologies, which is the need of the hour. Google being the pioneer, is dominating this space with the right set of cloud services being offered as part of GCP (Google Cloud Platform). At this juncture, this book will be very vital and will cover all the services that are being offered by GCP, putting emphasis on Data services. This book starts with sophisticated knowledge on

Cloud Computing. It also explains different types of data services/technology and machine learning algorithm/Pre-Trained API through real-business problems, which are built on the Google Cloud Platform (GCP). With some of the latest business examples and hands-on guide, this book will enable the developers entering the data analytics fields to implement an end-to-end data pipeline, using GCP Data services. Through the course of the book, you will come across multiple industry-wise use cases, like Building Datawarehouse using Big Query, a sample real-time data analytics solution on machine learning and Artificial Intelligence that helped with the business decision, by employing a variety of data science approaches on Google Cloud environment. Whether your business is at the early stage of cloud implementation in its journey or well on its way to digital transformation, Google Cloud's solutions and technologies will always help chart a path to success. This book can be used to develop the GCP concepts in an easy way. It contains many examples showcasing the implementation of a GCP service. It enables the learning of the basic and advance concepts of Google Cloud Data Platform. This book is divided into 7 chapters and provides a detailed description of the core concepts of each of the Data services offered by Google Cloud. KEY FEATURES Learn the basic concept of Cloud Computing along with different Cloud service provides with their supported Models (IaaS/PaaS/SaaS) Learn the basics of Compute Engine, App Engine, Container Engine, Project and Billing setup in the Google Cloud Platform Learn how and when to use Cloud DataFlow, Cloud DataProc and Cloud DataPrep Build real-time data pipeline to support real-time analytics using Pub/Sub messaging service Setting up a fully managed GCP Big Data Cluster using Cloud DataProc for running Apache Spark and Apache Hadoop clusters in a simpler, more cost-efficient manner Learn how to use Cloud Data Studio for visualizing the data on top of Big

Query Implement and understand real-world business scenarios for Machine Learning, Data Pipeline Engineering WHAT WILL YOU LEARN By the end of the book, you will have come across different data services and platforms offered by Google Cloud, and how those services/features can be enabled to serve business needs. You will also see a few case studies to put your knowledge to practice and solve business problems such as building a real-time streaming pipeline engine, Scalable Data Warehouse on Cloud, fully managed Hadoop cluster on Cloud and enabling TensorFlow/Machine Learning API's to support real-life business problems. Remember to practice additional examples to master these techniques. WHO IS THIS BOOK FOR This book is for professionals as well as graduates who want to build a career in Google Cloud data analytics technologies. While no prior knowledge of Cloud Computing or related technologies is assumed, it will be helpful to have some data background and experience. One stop shop for those who wish to get an initial to advance understanding of the GCP data platform. The target audience will be data engineers/professionals who are new, as well as those who are acquainted with the tools and techniques related to cloud and data space. ● Individuals who have basic data understanding (i.e. Data and cloud) and have done some work in the field of data analytics, can refer/use this book to master their knowledge/understanding. ● The highlight of this book is that it will start with the basic cloud computing fundamentals and will move on to cover the advance concepts on GCP cloud data analytics and hence can be referred across multiple different levels of audiences. Table of Contents 1. GCP Overview and Architecture 2. Data Storage in GCP 3. Data Processing in GCP with Pub/Sub and Dataflow 4. Data Processing in GCP with DataPrep and Dataflow 5. Big Query and Data Studio 6. Machine Learning with GCP 7. Sample Use cases and Examples

Building Machine Learning and Deep Learning Models on Google Cloud Platform - Ekaba Bisong 2019-09-27

Take a systematic approach to understanding the fundamentals of machine learning and deep learning from the ground up and how they are applied in practice. You will use this comprehensive guide for building and deploying learning models to address complex use cases while leveraging the computational resources of Google Cloud Platform. Author Ekaba Bisong shows you how machine learning tools and techniques are used to predict or classify events based on a set of interactions between variables known as features or attributes in a particular dataset. He teaches you how deep learning extends the machine learning algorithm of neural networks to learn complex tasks that are difficult for computers to perform, such as recognizing faces and understanding languages. And you will know how to leverage cloud computing to accelerate data science and machine learning deployments. Building Machine Learning and Deep Learning Models on Google Cloud Platform is divided into eight parts that cover the fundamentals of machine learning and deep learning, the concept of data science and cloud services, programming for data science using the Python stack, Google Cloud Platform (GCP) infrastructure and products, advanced analytics on GCP, and deploying end-to-end machine learning solution pipelines on GCP. What You'll Learn Understand the principles and fundamentals of machine learning and deep learning, the algorithms, how to use them, when to use them, and how to interpret your resultsKnow the programming concepts relevant to machine and deep learning design and development using the Python stack Build and interpret machine and deep learning models Use Google Cloud Platform tools and services to develop and deploy large-scale machine learning and deep learning products Be aware of the different facets and design choices to consider when modeling a learning problem Productionalize machine learning models into software products Who This Book Is For Beginners to the practice of data science and applied machine learning, data scientists at all levels, machine learning engineers, Google Cloud Platform data engineers/architects, and software developers

Big Data, Cloud Computing, Data Science & Engineering - Roger Lee 2018-08-13

This book presents the outcomes of the 3rd IEEE/ACIS International Conference on Big Data, Cloud Computing, Data Science & Engineering (BCD 2018), which was held on July 10–12, 2018 in Kanazawa. The aim of the conference was to bring together researchers and scientists, businesspeople and entrepreneurs, teachers, engineers, computer users, and students to discuss the various fields of computer science, to share their experiences, and to exchange new ideas and information in a meaningful way. All aspects (theory, applications and tools) of computer and information science, the practical challenges encountered along the way, and the solutions adopted to solve them are all explored here. The conference organizers selected the best papers from among those accepted for presentation. The papers were chosen on the basis of review scores submitted by members of the program committee and subsequently underwent further rigorous review. Following this second round of review, 13 of the conference’s most promising papers were selected for this Springer (SCI) book. We eagerly await the important contributions that we know these authors will make to the field of computer and information science.