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Autore	Eisenreich, Gunther
Titolo	La Physique / DE EISENMENGER,G
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Autore	Brown E.
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Collana	Natural resource report ; ; NPS/PACN/NRR--2011/421
Soggetti	Marine fishes - Islands of the Pacific Marine parks and reserves - Islands of the Pacific Coral reefs and islands - Islands of the Pacific Water quality - Islands of the Pacific Endangered species - United States Environmental monitoring - Islands of the Pacific Islands of the Pacific Environmental conditions
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Nota di contenuto	Intro -- Contents -- Preface -- Chapter 1 -- Introduction -- 1.1. Overview of Cloud Computing, Its Benefits and Applications -- 1.1.1. Benefits of Cloud Computing -- 1.1.2. Applications of Cloud Computing -- 1.1.2.1. Cloud Application Development -- 1.1.2.2. Cloud as an Enabler for Industry 4.0 -- 1.1.2.3. Cloud Radio Access Networks (C-RAN) -- 1.1.2.4. Big Data Analytics -- Cloud Private Branch Exchange (PBX) -- 1.2. Overview of Machine Learning and AI -- 1.2.1. Benefits of Machine Learning and AI -- 1.2.2. Applications of Machine Learning and AI -- 1.3. Combining AI with Cloud Computing for Real-Time Applications -- 1.4. Book Overview -- References -- Chapter 2 -- Cloud Computing Fundamentals -- 2.1. Definitions of Cloud Computing -- 2.2. Computing Paradigms -- 2.3. Cloud Computing Architecture and Enabling Technologies -- 2.4. Cloud Computing Deployment Models and Service Classes -- 2.4.1. Deployment Models -- 2.4.2. Service Classes -- 2.5. Introduction to the Firebase Cloud Platform -- 2.5.1. Firebase Cloud Database Configurations -- 2.5.2. Creating a Firebase Project and Real-time Database -- 2.5.3. Sending and Reading Data from the Database with an Android Application -- 2.6. Application Hosting on Firebase Using Node.js -- 2.6.1. Node.js Overview and Installation -- 2.6.2. Hosting a Web Application Using Node.js on Firebase for Reading and Writing Data to the Firebase Real-Time Database -- 2.7. Introduction to IBM Cloud Platform -- 2.7.1. IBM Cloud Database Configurations -- 2.7.2.

Desktop Application to Send and Receive Data to the IBM Cloudant Database -- 2.7.3. Mobile Application to Send and Receive Data to the IBM Cloudant Database -- 2.8. Application Hosting on IBM Bluemix via the Eclipse IDE -- 2.8.1. Creating a Desktop Application to Send a Request to the CalculateArea servlet.
2.8.2. Creating a Mobile Application to Send a Request to the CalculateArea Servlet -- References -- Chapter 3 -- Machine Learning Algorithms -- 3.1. Definition of AI, Machine Learning and Deep Learning -- 3.1.1. Artificial Narrow Intelligence (ANI) -- 3.1.2. Artificial General Intelligence (AGI) -- 3.1.3. Artificial Super Intelligence (ASI) -- 3.2. Overview of Machine Learning Algorithms -- 3.3. Unsupervised Learning Algorithms -- 3.3.1. Unsupervised Shallow Learning Models -- 3.3.1.1. K-Means Clustering -- 3.3.1.2. Hierarchical Clustering -- 3.3.1.3. Gaussian Mixture Models -- 3.3.2. Unsupervised Deep Learning Models -- 3.3.2.1. Restricted Boltzmann Machine (RBM) -- 3.4. Supervised Learning Algorithms -- 3.4.1. Supervised Shallow Learning Models -- 3.4.1.1. Simple Linear Regression -- 3.4.1.2. Multiple Linear Regression -- 3.4.1.3. Polynomial Regression -- 3.4.1.4. Naïve Bayes -- 3.4.1.5. K-Nearest Neighbour -- 3.4.2. Supervised Deep Learning Models -- 3.4.2.1. Multi-Layered Perceptrons -- 3.4.2.2. Convolutional Neural Network -- 3.5. Reinforcement Learning Algorithms -- 3.5.1. Q-Learning -- 3.5.2. SARSA -- 3.6. Ensemble Learning Algorithms -- 3.6.1. Random Forest -- 3.7. Deploying Javascript Machine Learning Algorithms on Firebase -- 3.7.1. Main Layout of the Application -- 3.7.2. Incorporating the KNN Flower Classification Link -- 3.7.3. Incorporating the Regression Algorithm Link -- 3.7.4. Incorporating the Clustering Algorithm Link -- References -- Chapter 4 -- Data Capture and Client Architecture for a Cloud-Based Real-Time Network Analytics System -- 4.1. Overview of Machine Learning Algorithms for Network Analytics -- 4.1.1. Classification of Network Data -- 4.1.2. Regression Analysis for Network Data -- 4.2. Complete System Model of the Network Analytics System -- 4.3. Mobile Application for Network Data Capture and Analytics.
4.3.1. Creating the Android project -- 4.3.2. Adding Libraries -- 4.3.3. Android Application Layout -- 4.3.3.1. Visual Outlook on Final Application -- 4.3.3.2. Building the Visuals of activity_main.xml -- 4.3.3.3. Building the Visuals of Prediction.xml -- 4.3.3.4. Building the Visuals for csvdownload.xml -- 4.3.4. Declaring Global Variables in Main Activity -- 4.3.5. Retrieving the Last Index from the Cloud -- 4.3.6. Traffic Monitoring in the onCreate() Method -- 4.3.6.1. Initialising Components -- 4.3.6.2. Getting Initial Readings -- 4.3.6.3. Monitor Button -- 4.3.6.4. Stop Button -- 4.3.6.5. Go to Analysis Button -- 4.3.6.6. Go to Download Button -- 4.3.7. Getting Network Parameters -- 4.3.7.1. Getting Speed Data -- 4.3.7.2. Getting Packet Data -- 4.3.7.3. Getting Wi-Fi Data -- 4.3.8. Building the Main Thread -- 4.3.8.1. Creating a Thread with Runnable Class -- 4.3.8.2. Fetching Network Data -- 4.3.8.3. Updating UI and Live Monitor -- 4.3.8.4. Pushing Values to the Local Server -- 4.3.8.5. Pushing Values Directly to the Cloud -- 4.3.9. Live Graph Plotting -- 4.3.9.1. Initialising the Chart -- 4.3.9.2. Creating and Populating the Spinner -- 4.3.9.3. Applying the Adapter to the Spinner -- 4.3.9.4. Getting Spinner Value as a String -- 4.3.9.5. Programmatically Adding Data onto the Live Graph -- 4.3.10. Performing Analytics Using Cloud Servlet or Local Server -- 4.3.10.1. The "Predict" Button -- 4.3.10.2. The "Classify" Button -- 4.3.11. Downloading to .csv Files -- 4.3.11.1. Declaring Global Variables -- 4.3.11.2. Initialising Components in onCreate() -- 4.3.11.3. Browse Button -- 4.3.11.4. Download Last N Samples Button

-- 4.3.11.5. Download by a Specific Date -- 4.3.11.6. Issuing the Directory Picker -- 4.3.11.7. Verifying Read and Write Permissions -- 4.3.11.8. Handling Permissions Request -- 4.3.11.9. Fetching Values from Cloudant Database.
4.3.12. Setting Permissions in Manifest -- 4.3.13. Testing the Mobile application -- 4.3.13.1. Live Monitor -- 4.3.13.2. Downloading Functionalities -- 4.3.13.3. Performing Analytics -- 4.4. Desktop Application for Network Data Capture and Analytics -- 4.4.1. Creating the NetBeans project -- 4.4.2. Desktop Application Layout -- 4.4.2.1. Visual Outlook on Final Application -- 4.4.2.2. Adding a JFrame Form to the Project -- 4.4.2.3. Adding Components to JFrame -- 4.4.3. Renaming Components -- 4.4.4. Adding Libraries -- 4.4.5. Declaring Global Variables in Netmonitor.Java -- 4.4.6. Creating Live Monitor Layout -- 4.4.7. Retrieving the Last Index from the Cloud -- 4.4.8. Start Button -- 4.4.8.1. Retrieving the Number of Items -- 4.4.8.2. Finding Network Interface in Use -- 4.4.8.3. Getting Initial Parameters -- 4.4.8.4. Updating GUI and Live Monitor -- 4.8.4.5. Pushing Values to the Local Server -- 4.8.4.6. Pushing Values to the Cloud -- 4.4.9. Stop Button -- 4.4.10. Clearing Graph -- 4.4.11. Performing Analytics Using Servlet or Local Server -- 4.4.11.1. Predict Button -- 4.4.11.2. Classify Button -- 4.4.12. Downloading to .csv Files -- 4.4.12.1. Browse Button -- 4.4.12.2. Download Last N Samples Button -- 4.4.12.3. Download by Specific Date Button -- 4.4.12.4. Fetching Values from Cloudant Database -- 4.4.13. Testing the Desktop Application -- 4.4.13.1. Live Monitor -- 4.4.13.2. Downloading Functionalities -- 4.4.13.3. Performing Analytics -- 4.5. Cloud Database Configurations for Network Analytics -- 4.5.1. Creating a Cloudant Database to Store Network Data -- 4.5.2. Adding an Index to the Database -- References -- Chapter 5 -- Server and Servlet Architectures for a Cloud-Based Real-Time Network Analytics System -- 5.1. Local Server Implementation for Network Data Capture and Forecasting -- 5.1.1. Creating the NetBeans Project.
5.1.2. Local Server Layout -- 5.1.2.1. Visual Outlook on Final Application -- 5.1.2.2. Adding Components to JFrame -- 5.1.3. Renaming Components -- 5.1.4. Adding Libraries -- 5.1.5. Declaring Global Variables in LocServer.java -- 5.1.6. Creating Live Monitor Layout -- 5.1.7. Retrieving the Last Index from the Cloud -- 5.1.8. Local Monitoring Server Implementation -- 5.1.8.1. Calling getNumberOfItems -- 5.1.8.2. Server Thread for Android Values -- 5.1.8.3. Server Thread for PC Values -- 5.1.8.4. Stopping the Server -- 5.1.8.5. Uploading Android Values to the Cloud -- 5.1.9. Filling Localhost Databases -- 5.1.10. Analytics -- 5.1.11. Classification -- 5.1.11.1. Filling Cloudant Databases -- 5.1.11.2. Retrieving Pre-Labelled Values from Cloudant Database or Localhost -- 5.1.11.3. Classifying Network Parameters Using K-Nearest Neighbour (KNN) -- 5.1.11.4. Performing K-Nearest Neighbour (KNN) -- 5.1.11.5. Classifying Network Parameters Using Multilayer Perceptron (MLP) -- 5.1.11.6. Performing Multilayer Perceptron (MLP) Classification -- 5.1.12. Regression -- 5.1.12.1. Using the Sliding Window Method -- 5.1.12.2. Filling Cloudant Databases -- 5.1.12.3. Retrieving Streaming Values from Cloudant Database -- 5.1.12.4. Multiple Linear Regression Models for Network data -- 5.1.12.5. Performing Multiple Linear Regression (MLR) -- 5.1.12.6. Multilayer Perceptron Models for Network data -- 5.1.12.7. Performing Multilayer Perceptron (MLP) Regression -- 5.1.13. Downloading to .csv Files -- 5.1.13.1. Browse Button -- 5.1.13.2. Download the Last N Samples Button -- 5.1.13.2. Download by Specific Date Button -- 5.1.14. Local Download and Analytics -- 5.1.15. Making the GUI User-Friendly -- 5.2. Testing the

Local Server -- 5.2.1. Local Live Monitoring -- 5.2.2. Downloading Functionalities -- 5.2.3. Performing Analytics.
5.3. Servlet Program for Network Analytics, Monitoring and Data Retrieval.

Sommario/riassunto

With the emergence of revolutionary technological standards such as 5G and Industry 4.0, real time applications which require both cloud computing and machine learning are becoming increasingly common. Examples of such applications include real-time scheduling and resource allocation in cloud radio access networks, real-time process monitoring and control in industrial Internet of Things, network traffic analysis, short-term weather forecasting, and robotics. Given the increase in such applications, several cloud service providers such as Microsoft Azure Machine Learning, IBM Watson, and Google AI have started incorporating Artificial Intelligence (AI) applications on their platforms as well as providing Analytics as a Service. While it is now simple for users to deploy AI or machine learning algorithms using these cloud platforms, researchers from academia and industry can also develop their own machine learning applications and run them on these platforms to benefit from high processing power and global deploy ability. The main purpose of this book is to provide in-depth coverage of the programming methodologies and configurations required in developing real-time applications that require machine learning algorithms to be hosted on cloud computing platforms to leverage storage and computing resources. The real-time applications developed target network traffic analysis and weather forecasting systems. Several machine learning algorithms, namely multiple linear regression, K-Nearest-Neighbours, Multi-Layer-Perceptron, and Convolutional Neural Networks have been employed in the analysis. The programming languages used include Java, Javascript, HTML5 and MATLAB. Moreover, the Netbeans, Eclipse and Android studio IDEs have been used for developing desktop, web, and mobile apps as well as servlets. The use of several Application Programming Interfaces (APIs) to develop the desktop, mobile, and web apps have been fully elaborated. The main cloud platform used for the network analysis and weather forecasting systems is the IBM cloud, but Google Firebase, along with Node.js, have also been used in other examples of machine learning applications described in the book. In addition to hosting and running applications on the cloud, the setting up of local servers that can act as fog devices, using client-server sockets and network programming methodologies, has also been explained in detail. With detailed explanations on all fundamental concepts, programming techniques, and configuration steps in developing cloud hosted machine learning applications, this book will provide excellent guidance and a full hands-on experience to researchers, professionals and students working in this field.