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Nota di contenuto	Contents at a Glance; Contents; About the Authors; Acknowledgments; Foreword; Introduction; Part1: Introducing Data Science and Microsoft Azure Machine Learning; Chapter 1: Introduction to Data Science; What Is Data Science?; Analytics Spectrum; Descriptive Analysis; Diagnostic Analysis; Predictive Analysis; Prescriptive Analysis; Why Does It Matter and Why Now?; Data as a Competitive Asset; Increased Customer Demand; Increased Awareness of Data Mining Technologies; Access to More Data; Faster and Cheaper Processing Power; The Data Science Process; Common Data Science Techniques Classification AlgorithmsClustering Algorithms; Regression Algorithms; Simulation; Content Analysis; Recommendation Engines; Cutting Edge of Data Science; The Rise of Ensemble Models; Real World Applications of Ensemble Models; Building an Ensemble Model; Summary; Bibliography; Chapter 2: Introducing Microsoft Azure Machine Learning; Hello, Machine Learning Studio!; Components of an Experiment; Five Easy Steps to Creating an Experiment; Step 1: Get Data; Step 2: Preprocess Data; Step 3: Define Features; Step 4: Choose and Apply Machine Learning Algorithms; Step 5: Predict Over New Data

Deploying Your Model in ProductionDeploying Your Model into Staging; Testing the Web Service; Moving Your Model from Staging into Production; Accessing the Azure Machine Learning Web Service; Summary; Chapter 3: Integration with R; R in a Nutshell; Building and Deploying Your First R Script; Using R for Data Preprocessing; Using a Script Bundle (Zip); Building and Deploying a Decision Tree Using R; Summary; Part2: Statistical and Machine Learning Algorithms; Chapter 4: Introduction to Statistical and Machine Learning Algorithms; Regression Algorithms; Linear Regression; Neural Networks
Decision TreesBoosted Decision Trees; Classification Algorithms; Support Vector Machines; Bayes Point Machines; Clustering Algorithms; Summary; Part3: Practical Applications; Chapter 5: Building Customer Propensity Models; The Business Problem; Data Acquisition and Preparation; Loading Data from Your Local File System; Loading Data from Other Sources; Data Analysis; More Data Treatment; Feature Selection; Training the Model; Model Testing and Validation; Model Performance; Summary; Chapter 6: Building Churn Models; Churn Models in a Nutshell; Building and Deploying a Customer Churn Model Preparing and Understanding DataData Preprocessing and Feature Selection; Classification Model for Predicting Churn; Evaluating the Performance of the Customer Churn Models; Summary; Chapter 7: Customer Segmentation Models; Customer Segmentation Models in a Nutshell; Building and Deploying Your First K-Means Clustering Model; Feature Hashing; Identifying the Right Features; Properties of K-Means Clustering; Customer Segmentation of Wholesale Customers; Loading the Data from the UCI Machine Learning Repository; Using K-Means Clustering for Wholesale Customer Segmentation
Cluster Assignment for New Data

Sommario/riassunto

Data Science and Machine Learning are in high demand, as customers are increasingly looking for ways to glean insights from all their data. More customers now realize that Business Intelligence is not enough as the volume, speed and complexity of data now defy traditional analytics tools. While Business Intelligence addresses descriptive and diagnostic analysis, Data Science unlocks new opportunities through predictive and prescriptive analysis. The purpose of this book is to provide a gentle and instructionally organized introduction to the field of data science and machine learning, with a focus on building and deploying predictive models. The book also provides a thorough overview of the Microsoft Azure Machine Learning service using task oriented descriptions and concrete end-to-end examples, sufficient to ensure the reader can immediately begin using this important new service. It describes all aspects of the service from data ingress to applying machine learning and evaluating the resulting model, to deploying the resulting model as a machine learning web service. Finally, this book attempts to have minimal dependencies, so that you can fairly easily pick and choose chapters to read. When dependencies do exist, they are listed at the start and end of the chapter. The simplicity of this new service from Microsoft will help to take Data Science and Machine Learning to a much broader audience than existing products in this space. Learn how you can quickly build and deploy sophisticated predictive models as machine learning web services with the new Azure Machine Learning service from Microsoft.