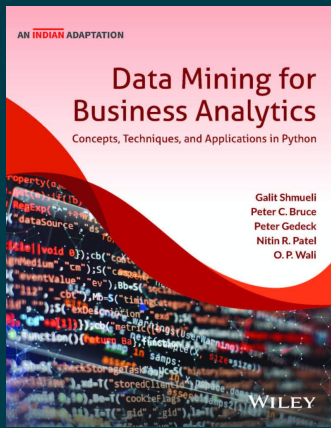


WILEY

Data Mining for Business Analytics: Concepts, Techniques and Applications in Python (An Indian Adaptation)

By Galit Shmueli, Peter C. Bruce, Peter Gedeck, Nitin R. Patel, O.P. Wali

Paperback

ISBN: 9789357461672

Publication: [NOT PROVIDED] publication_date

Page Count: [NOT PROVIDED] pages pages

₹1,099.00

• Description

Data Mining for Business Analytics: Concepts, Techniques, and Applications in Python presents an applied approach to data mining concepts and methods, using python software for illustration. Readers will learn how to implement a variety of popular data mining algorithms in Python to tackle business problems and opportunities. It is a comprehensive resource for students pursuing courses in data mining, business analytics, and related courses within the domain of AI.

[Click to Download Datasets](#)

• About the Author

Galit Shmueli, Peter C. Bruce, Peter Gedeck, Nitin R. Patel, O.P. Wali

Galit Shmueli, PhD

• Table of Contents

Part I Preliminaries

Chapter 1 Introduction

1.1 What Is Business Analytics?

1.2 What Is Data Mining?

1.3 Data Mining and Related Terms

1.4 Big Data

1.5 Data Science

1.6 Why Are There So Many Different Methods?

1.7 Terminology and Notation

1.8 Road Maps to This Book

Chapter 2 Overview of the Data Mining Process

2.1 Introduction

2.2 Core Ideas in Data Mining

2.3 The Steps in Data Mining

2.4 Preliminary Steps

2.5 Predictive Power and Overfitting

2.6 Building a Predictive Model

2.7 Using Python for Data Mining on a Local Machine

2.8 Automating Data Mining Solutions

2.9 Ethical Practice in Data Mining

Part II Data Exploration And Dimension Reduction

Chapter 3 Data Visualization

3.1 Introduction

3.2 Data Examples

3.3 Basic Charts: Bar Charts, Line Graphs, and Scatter Plots

3.4 Multidimensional Visualization

3.5 Specialized Visualizations

3.6 Summary: Major Visualizations and Operations, by Data Mining Goal

Chapter 4 Dimension Reduction

4.1 Introduction

4.2 Curse of Dimensionality

4.3 Practical Considerations

4.4 Data Summaries

4.5 Correlation Analysis

4.6 Reducing the Number of Categories in Categorical Variables

4.7 Converting a Categorical Variable to a Numerical Variable

4.8 Principal Components Analysis

4.9 Dimension Reduction Using Regression Models

4.10 Dimension Reduction Using Classification and Regression Trees

Part III Performance Evaluation

Chapter 5 Evaluating Predictive Performance

5.1 Introduction

5.2 Evaluating Predictive Performance

5.3 Judging Classifier Performance

5.4 Judging Ranking Performance

5.5 Oversampling

Part IV Prediction And Classification Methods

Chapter 6 Multiple Linear Regression

6.1 Introduction

6.2 Explanatory vs. Predictive Modeling

6.3 Estimating the Regression Equation and Prediction

6.4 Variable Selection in Linear Regression

Chapter 7 k-Nearest Neighbors (k-NN)

7.1 The k-NN Classifier (Categorical Outcome)

7.2 k-NN for a Numerical Outcome

7.3 Advantages and Shortcomings of k-NN Algorithms

Chapter 8 The Naive Bayes Classifier

8.1 Introduction

8.2 Applying the Full (Exact) Bayesian Classifier

8.3 Advantages and Shortcomings of the Naive Bayes Classifier

Chapter 9 Classification and Regression Trees

9.1 Introduction

9.2 Classification Trees

9.3 Evaluating the Performance of a Classification Tree

9.4 Avoiding Overfitting

9.5 Classification Rules from Trees

9.6 Classification Trees for More Than Two Classes

9.7 Regression Trees

9.8 Improving Prediction: Random Forests and Boosted Trees

9.9 Advantages and Weaknesses of a Tree

Chapter 10 Logistic Regression

10.1 Introduction

10.2 The Logistic Regression Model

10.3 Example: Rating Indian Quick Food Services

10.4 Evaluating Classification Performance

10.5 Logistic Regression for Multi-Class Classification

10.6 Example of Complete Analysis: Predicting Delayed Flights

Chapter 11 Neural Nets

11.1 Introduction

11.2 Concept and Structure of a Neural Network

11.3 Fitting a Network to Data

11.4 Required User Input

11.5 Exploring the Relationship Between Predictors and Outcome

11.6 Deep Learning

11.7 Advantages and Weaknesses of Neural Networks

Chapter 12 Discriminant Analysis

12.1 Introduction

12.2 Distance of a Record from a Class

12.3 Fisher's Linear Classification Functions

12.4 Classification Performance of Discriminant Analysis

12.5 Prior Probabilities

12.6 Unequal Misclassification Costs

12.7 Classifying More Than Two Classes

12.8 Advantages and Weaknesses

Chapter 13 Combining Methods: Ensembles and Uplift Modeling

13.1 Ensembles

13.2 Uplift (Persuasion) Modeling

13.3 Summary

Part V Mining Relationships Among Records

Chapter 14 Association Rules and Collaborative Filtering

14.1 Association Rules

14.2 Collaborative Filtering

14.3 Summary

Chapter 15 Cluster Analysis

15.1 Introduction

15.2 Measuring Distance Between Two Records

15.3 Measuring Distance Between Two Clusters

15.4 Hierarchical (Agglomerative) Clustering

15.5 Non-hierarchical Clustering: The k-Means Algorithm

Part VI Forecasting Time Series

Chapter 16 Handling Time Series

16.1 Introduction

16.2 Descriptive vs. Predictive Modeling

16.3 Popular Forecasting Methods in Business

16.4 Time Series Components

16.5 Data-Partitioning and Performance Evaluation

Chapter 17 Regression-Based Forecasting

17.1 A Model with Trend

17.2 A Model with Seasonality

17.3 A Model with Trend and Seasonality

17.4 Autocorrelation and ARIMA Models

Chapter 18 Smoothing Methods

18.1 Introduction

18.2 Moving Average

18.3 Simple Exponential Smoothing

18.4 Advanced Exponential Smoothing

Part VII Data Analytics

Chapter 19 Social Network Analytics

19.1 Introduction

19.2 Directed vs. Undirected Networks

19.3 Visualizing and Analyzing Networks

19.4 Social Data Metrics and Taxonomy
19.5 Using Network Metrics in Prediction and Classification
19.6 Collecting Social Network Data with Python
19.7 Advantages and Disadvantages
Chapter 20 Text Mining
20.1 Introduction
20.2 The Tabular Representation of Text: Term-Document Matrix and “Bag-of-Words”
20.3 Bag-of-Words vs. Meaning Extraction at Document Level
20.4 Preprocessing the Text
20.5 Implementing Data Mining Methods
20.6 Example: Online Discussions on Autos and Electronics
20.7 Summary
Part VIII Cases
Chapter 21 Cases
21.1 Charles Book Club
21.2 German Credit
21.3 Tayko Software Cataloger
21.4 Political Persuasion
21.5 Taxi Cancellations
21.6 Segmenting Consumers of Bath Soap
21.7 Direct-Mail Fundraising
21.8 Predicting Tourist Travel Packages
21.9 Time Series Case: Forecasting Public Transportation Demand
21.10 Predicting Attrition
21.11 Attitude Toward Therapy Suggestions in Covid-19 Times
References
Data Files Used in the Book
Python Utilities Functions
Index

To purchase this product, please visit:
<https://wiley.indiafin.com/data-mining-for-business-analytics-concepts-techniques-and-applications-in-python-an-indian-adaptation.html>



Scan to buy