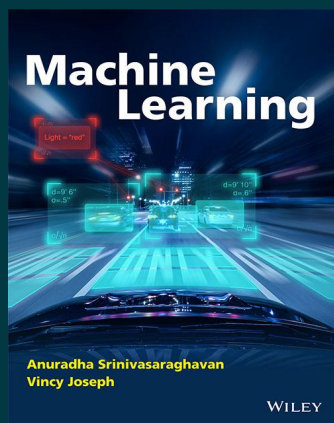




Machine Learning

By Anuradha Srinivasaraghavan, Vincy Joseph

Paperback

9788126578511

₹824.00

Pages: 328

Description

This book offers the readers the basics of machine learning in a very simple, user-friendly language. While browsing the Table of Contents, you will realize that you are given an introduction to every concept that comes under the umbrella of machine learning. This book is aimed at students who are new to the topic of machine learning. It is meant for students studying machine learning in their undergraduate and postgraduate courses in information technology. It is also aimed at computer engineering students. It will help familiarize students with the terms and terminologies used in machine learning. We hope that this book serves as an entry point for students to pursue their future studies and careers in machine learning.

About the Author

Anuradha Srinivasaraghavan, Vincy Joseph

Anuradha Srinivasaraghavan is an academician in the University of Mumbai. Her prime interests are in the areas of machine learning, soft computing, data mining, and databases. She actively participates in content development of the subjects. She also participates in research avenues in the areas of machine learning and soft computing. She completed her postgraduate in 2008 in Computer Engineering. Since then, she has been working in the areas of machine learning, data mining, soft computing

Table of Contents

Part 1 Basics of Machine Learning

Chapter 1 Introduction to Machine Learning

1.1 What is Machine Learning?

1.2 Where is Machine Learning Used?

1.3 Applications of Machine Learning

1.4 Types of Machine Learning

Chapter 2 Model and Cost Function

2.1 Introduction

2.2 Representation of a Model

2.3 Cost Function Notation for Measuring the Accuracy of a Hypothesis Function

2.4 Measuring Accuracy of a Hypothesis Function

2.5 Minimizing the Cost Function for a Single-Variable Function

2.6 Minimizing the Cost Function for a Two-Variable Function

2.7 Role of Gradient Function in Minimizing a Cost Function

Chapter 3 Basics of Vectors and Matrices

3.1 Introduction

3.2 Notations

3.3 Types of Matrices

3.4 Matrix Operations

3.5 Determinant of a Matrix

3.6 Inverse of a Matrix

Chapter 4 Basics of Python

4.1 Introduction

4.2 Installing Python

4.3 Anaconda

4.4 Running Jupyter Notebook

4.5 Python 3: Basic Syntax

4.6 Python Identifiers

4.7 Basic Operators in Python

4.8 Python Decision-Making

4.9 Python Loops

4.10 Numerical Python (NumPy)

4.11 NumPy Matplotlib

4.12 Introduction to Pandas

4.13 Introduction to Scikit-Learn

Chapter 5 Data Preprocessing

5.1 Overview of Data Preprocessing

5.2 Data Cleaning

5.3 Data Integration

5.4 Data Transformation

5.5 Data Reduction or Dimensionality Reduction

Part 2 Supervised Learning Algorithms

Chapter 6 Artificial Neural Networks

6.1 Introduction

6.2 Evolution of Neural Networks

6.3 Biological Neuron

6.4 Basics of Artificial Neural Networks

6.5 Activation Functions

6.6 McCulloch–Pitts Neuron Model

Chapter 7 Linear Regression

- 7.1 Introduction to Supervised Learning and Regression
- 7.2 Statistical Relation between Two Variables and Scatter Plots
- 7.3 Steps to Establish a Linear Regression
- 7.4 Evaluation of Model Estimators
- 7.5 Solved Problems on Linear Regression
- Chapter 8 Logistic Regression
 - 8.1 Introduction to Logistic Regression
 - 8.2 Scenarios Which Require Logistic Regression
 - 8.3 Odds
 - 8.4 Building Logistic Regression Model (Logit Function)
 - 8.5 Maximum Likelihood Estimation
 - 8.6 Example of Logistic Regression
- Chapter 9 Decision Tree
 - 9.1 Introduction to Classification and Decision Tree
 - 9.2 Problem Solving Using Decision Trees
 - 9.3 Basic Decision Tree Learning Algorithm
 - 9.4 Popularity of Decision Tree Classifiers
 - 9.5 Steps to Construct a Decision Tree
 - 9.6 Classification Using Decision Trees
 - 9.7 Issues in Decision Trees
 - 9.8 Rule-Based Classification
 - 9.9 Pruning the Rule Set
- Chapter 10 Support Vector Machines
 - 10.1 Introduction to Support Vector Machines
 - 10.2 Linear Support Vector Machines
 - 10.3 Optimal Hyperplane
 - 10.4 Basics of Vectors
 - 10.5 Radial Basis Functions
- Chapter 11 Bayesian Classification
 - 11.1 Introduction to Bayesian Classifiers
 - 11.2 Naive Bayes Classifier
 - 11.3 Bayesian Belief Networks
 - 11.4 k-Nearest Neighbor (KNN)
 - 11.5 Measuring Classifier Accuracy
- Chapter 12 Hidden Markov Model
 - 12.1 Introduction to Hidden Markov Model
 - 12.2 Issues in Hidden Markov Model
- Part 3 Unsupervised Algorithms

Chapter 13 Introduction to Unsupervised Learning Algorithms

13.1 Introduction to Clustering

13.2 Types of Clustering

13.3 Partitioning Methods of Clustering

13.4 Hierarchical Methods

Part 4 Optimization Techniques

Chapter 14 Optimization

14.1 Introduction to Optimization

14.2 Classification of Optimization Problems

14.3 Linear vs Nonlinear Programming Problems

14.4 Unconstrained Minimization Problems

14.5 Gradient-Based Methods (Descent Methods)

14.6 Introduction to Derivative-Free Optimization

14.7 Derivative-Based vs Derivative-Free Optimization

Summary

Multiple-Choice Questions

Very Short Answer Questions

Short Answer Questions

Review Questions

Answers

Appendices

Bibliography

Index

To purchase this product, please visit:

<https://www.wileyindia.com/machine-learning.html>



Scan to buy