1. Record Nr. UNINA9910298991203321

Autore	Qin Zengchang
Titolo	Uncertainty Modeling for Data Mining : A Label Semantics Approach / / by Zengchang Qin, Yongchuan Tang
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2014
ISBN	3-642-41251-3
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (303 p.)
Collana	Advanced Topics in Science and Technology in China, , 1995-6827
Disciplina	004 004.0151 005.7 006.3 006.312
Soggetti	Data mining Artificial intelligence Computer networks Computer science - Mathematics Data Mining and Knowledge Discovery Artificial Intelligence Computer Communication Networks Mathematical Applications in Computer Science
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Cover; Title Page; Copyright Page; Dedication Page; Preface; Acknowledgements; Table of Contents; Acronyms; Notations; 1 Introduction; 1.1 Types of Uncertainty; 1.2 Uncertainty Modeling and Data Mining; 1.3 RelatedWorks; References; 2 Induction and Learning; 2.1 Introduction; 2.2 Machine Learning; 2.2.1 Searching in Hypothesis Space; 2.2.2 Supervised Learning; 2.2.3 Unsupervised Learning; 2.2.4 Instance-Based Learning; 2.3 Data Mining and Algorithms; 2.3.1 Why Do We Need Data Mining?; 2.3.2 How Do We do Data Mining?; 2.3.3 Artificial Neural Networks; 2.3.4 Support Vector Machines 2.4 Measurement of Classifiers2.4.1 ROC Analysis for Classification;

Sommario/riassunto

Machine learning and data mining are inseparably connected with uncertainty. The observable data for learning is usually imprecise, incomplete or noisy. Uncertainty Modeling for Data Mining: A Label Semantics Approach introduces 'label semantics', a fuzzy-logic-based theory for modeling uncertainty. Several new data mining algorithms based on label semantics are proposed and tested on real-world datasets. A prototype interpretation of label semantics and new prototype-based data mining algorithms are also discussed. This book offers a valuable resource for postgraduates, researchers and other professionals in the fields of data mining, fuzzy computing and uncertainty reasoning. Zengchang Qin is an associate professor at the School of Automation Science and Electrical Engineering, Beihang University, China; Yongchuan Tang is an associate professor at the College of Computer Science, Zhejiang University, China.