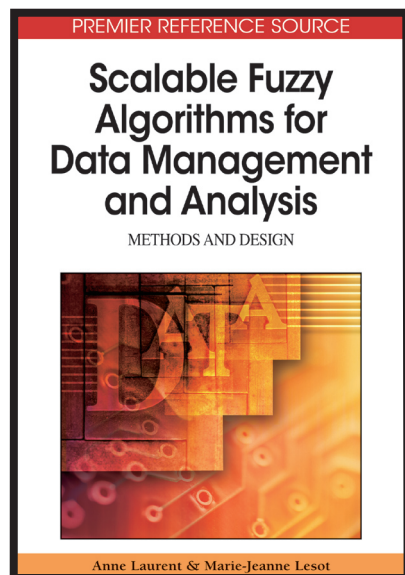


New Release

October 2009

Scalable Fuzzy Algorithms for Data Management and Analysis: Methods and Design



**Edited by: Anne Laurent, LIRMM, University
Montpellier 2, France and Marie-Jeanne Lesot, LIP6,
University Paris 6, France**

13-digit ISBN: 978-1-60566-858-1

380 pages; 2010 Copyright

Price: US \$180.00 (hardcover*)

Perpetual Access: US \$270.00

Print + Perpetual Access: US \$360.00

Illustrations: figures, tables (8 1/2" x 11")

Translation Rights: World

*Paperback is not available.

Today, fuzzy methods provide tools to handle data sets in relevant, robust and interpretable ways, making it possible to model and exploit imprecision and uncertainty in data modeling and data mining.

“This book includes success stories based on fuzzy logic that address real-world challenges to handle huge amounts of data for practical tasks.”

**- Anne Laurent, LIRMM, University
Montpellier 2, France**

Scalable Fuzzy Algorithms for Data Management and Analysis: Methods and Design presents innovative, cutting-edge fuzzy techniques that highlight the relevance of fuzziness for huge data sets in the perspective of scalability issues, from both a theoretical and experimental point of view. It covers a wide scope of research areas including data representation, structuring and querying as well as information retrieval and data mining. It encompasses different forms of databases, including data warehouses, data cubes, tabular or relational data, and many applications among which music warehouses, video mining, bioinformatics, semantic web and data streams.

Subject:

Data Mining/Databases; Artificial Intelligence; Machine Learning; Multimedia Technologies; Information Resources Management

Market:

This essential publication will be invaluable to academic and research libraries as well as those interested in the latest advances in data management and information retrieval within large databases. Students, researchers, and educators in the fields of computer science, information systems science, and database administration will find this resource provides cutting-edge solutions for data allocation and retrieval. Practitioners and systems analysts, will also benefit.



Excellent addition to your library! Recommend to your acquisitions librarian.

www.info-sci-ref.com

Scalable Fuzzy Algorithms for Data Management and Analysis: Methods and Design

Edited by: Anne Laurent, LIRMM, University Montpellier 2, France and Marie-Jeanne Lesot, LIP6, University Paris 6, France

Table of Contents

Section I: Introductory Chapters

Chapter I: Electronic Hardware for Fuzzy Computation

Koldo Basterretxea, Universidad Del País Vasco, Spain
Inés del Campo, Universidad Del País Vasco, Spain

Chapter II: Scaling Fuzzy Models

Lawrence O. Hall, University of South Florida, USA
Dmitry B. Goldgof, University of South Florida, USA
Juana Canul-Reich, University of South Florida, USA
Prodip Hore, University of South Florida, USA
Weijian Cheng, University of South Florida, USA
Larry Shoemaker, University of South Florida, USA

Section II: Databases and Queries

Chapter III: Using Fuzzy Song Sets in Music Warehouses

François Deliège, Aalborg University, Denmark
Torben Bach Pedersen, Aalborg University, Denmark

Chapter IV: Mining Association Rules from Fuzzy DataCubes

Nicolás Marín, University of Granada, Spain
Carlos Molina, University of Jaen, Spain
Daniel Sánchez, University of Granada, Spain
M. Amparo Vila, University of Granada, Spain

Chapter V: Scalable Reasoning with Tractable Fuzzy Ontology Languages

Giorgos Stoilos, National and Technical University of Athens, Greece
Jeff Z. Pan, University of Aberdeen, UK
Giorgos Stamou, National and Technical University of Athens, Greece

Chapter VI: A Random Set and Prototype Theory Model of Linguistic Query Evaluation

Jonathan Lawry, University of Bristol, UK
Yongchuan Tang, Zhejiang University, China

Chapter VII: A Flexible Language for Exploring Clustered Search Results

Gloria Bordogna, CNR IDPA, Italy
Alessandro Campi, Politecnico di Milano, Italy
Stefania Ronchi, Politecnico di Milano, Italy
Giuseppe Psaila, Università di Bergamo, Italy

Section III: Summarization

Chapter VIII: Linguistic Data Summarization: a High Scalability through the Use of Natural Language?

Janusz Kacprzyk, Polish Academy of Sciences, Poland
Sławomir Zadrozny, Polish Academy of Sciences, Poland

Chapter IX: Human Focused Summarizing Statistics Using OWA Operators

Ronald R. Yager, Iona College, USA

Chapter X: (Approximate) Frequent Item Set Mining Made Simple with a Split and Merge Algorithm

Christian Borgelt, European Center for Soft Computing, Spain
Xiaomeng Wang, Otto-von-Guericke-University of Magdeburg, Germany

Chapter XI: Fuzzy Association Rules to Summarize Multiple Taxonomies in Large Databases

Trevor Martin, University of Bristol, UK
Yun Shen, University of Bristol, UK

Chapter XII: Fuzzy Cluster Analysis of Larger Data Sets

Roland Winkler, German Aerospace-Center Braunschweig, Germany
Frank Klawonn, University of Applied Sciences Braunschweig, Germany
Frank Höppner, University of Applied Sciences Braunschweig, Germany
Rudolf Kruse, Otto-von-Guericke University, Magdeburg, Germany

Chapter XIII: Fuzzy Clustering with Repulsive Prototypes

Frank Rehm, German Aerospace-Center Braunschweig, Germany
Roland Winkler, German Aerospace-Center Braunschweig, Germany
Rudolf Kruse, Otto-von-Guericke University Magdeburg, Germany

Section IV: Real-World Challenges

Chapter XIV: Early Warning from Car Warranty Data using a Fuzzy Logic Technique

Mark Last, Ben-Gurion University of the Negev, Israel
Yael Mendelson, Ben-Gurion University of the Negev, Israel
Sugato Chakrabarty, GM Technical Center, India
Karishma Batra, GM Technical Center, India

Chapter XV: High Scale Fuzzy Video Mining

Christophe Marsala, Université Pierre et Marie Curie Paris 6, France
Marcin Detyniecki, Université Pierre et Marie Curie Paris 6, France

Chapter XVI: Fuzzy Clustering of Large Relational Bioinformatics Datasets

Mihail Popescu, University of Missouri, USA

About the Editors:

Anne Laurent has been an assistant professor at the LIRMM lab since September 2003. As a member of the TATOO group, she works on data mining, OLAP Mining, sequential pattern mining, tree mining, stream mining both for trends and exceptions detections, and is particularly interested in the study of the use of fuzzy logic to provide more valuable results, while remaining scalable. Anne Laurent has numerous collaborations with companies, including small and big businesses. She serves as reviewer in the main conferences and journals related to data mining and fuzzy logic.

Marie-Jeanne Lesot obtained her PhD from the University Pierre and Marie Curie in 2005 and since 2006 she is an associate professor in the Department of Computer Science of Paris 6 (LIP6) and member of the Machine Learning and Information Retrieval (MALIRE) Department. Her research interests include fuzzy machine learning, in particular fuzzy clustering, typicality and fuzzy prototypes, and similarity measures.

Excellent addition to your library! Recommend to your acquisitions librarian.

www.info-sci-ref.com