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Transactions on Rough Sets VIII

Springer

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Preface

Volume VIII of the *Transactions on Rough Sets (TRS)* contains a wide spectrum of contributions to the theory and applications of rough sets.

The pioneering work by Prof. Zdzisław Pawlak led to the introduction of knowledge representation systems during the early 1970s and the discovery of rough sets during the early 1980s. During his lifetime, he nurtured worldwide interest in approximation, approximate reasoning, and rough set theory and its applications[1]. Evidence of the influence of Prof. Pawlak's work can be seen in the growth in the rough-set literature that now includes over 4000 publications by more than 1900 authors in the rough set database[2] as well as the growth and maturity of the International Rough Set Society[3].

This volume of *TRS* presents papers that introduce a number of new advances in the foundations and applications of artificial intelligence, engineering, logic, mathematics, and science. These advances have significant implications in a number of research areas. In addition, it is evident from the papers included in this volume that rough set theory and its application form a very active research area worldwide. A total of 58 researchers from 11 countries are represented in this volume, namely, Australia, Canada, Chile, Germany, India, Poland, P.R. China, Oman, Spain, Sweden, and the USA. Evidence of the vigor, breadth, and depth of research in the theory and applications rough sets can be found in the articles in this volume.

This volume contains 17 papers that explore a number of research streams. These research streams are represented by papers on rough consequence logics (M.W. Bunder, Mohua Banerjee, and Mihir K. Chakraborty), approximations for incomplete data (Jerzy W. Grzymała-Busse and Wojciech Rzasa), dominance-based rough set approach and multi-criteria decision analysis (Ye Chen, Kevin W. Li, Jason Levy, Keith W. Hipel, and D. Marc Kilgour), partially ordered monads (Patrik Eklund and M. Ángeles Galán), biological control of leafy spurge weed (Mohamed T. Elhadi and Wojciech Ziarko), Pawlak flow graphs and granular computing (Huawen Liu, Jigui Sun, and Huijie Zhang), generalized indiscernibility relations (Wojciech Jaworski), information quanta and approximation operators (Marcin Wolski), reducts and decision rules (Mikhail Ju. Moshkov, Marcin Piliszczuk, and Beata Zielosko), evolutionary rough k-medoid clustering (Georg Peters, Martin Lampart, and Richard Weber), learning complex concepts (Tuan Trung Nguyen), rough set database system representing 3421 publications

[1] See, *e.g.*, Pawlak, Z., Skowron, A.: Rudiments of rough sets. Information Sciences 177, 3–27 (2007); Pawlak, Z., Skowron, A.: Rough sets: Some extensions. Information Sciences 177, 28–40 (2007); Pawlak, Z., Skowron, A.: Rough sets and Boolean reasoning. Information Sciences 177, 41–73 (2007).

[2] `http://rsds.wsiz.rzeszow.pl/rsds.php`

[3] `http://roughsets.home.pl/www/`

and 1913 authors (Zbigniew Suraj and Piotr Grochowalski), attribute reduction and machine learning (Yiyu Yao, Yan Zhao, Jue Wang, and Suqing Han), rough set theory and applications in China (Guoyin Wang, Qingua Zhang, Houkan Huang, Dongyi Ye, Qinghua Hu, Xuegang Hu, Zhongzhi Shi, Yongli Li, Lin Shang, Liping An, Ying Sai, Shanben Chen, Jiye Liang, Keyun Qin, Huanglin Zeng, Keming Xie, Duoqian Miao, Fan Min, Zhaocong Wu, Weizhi Wu, and Jianhua Dai), rough neural computing in classifying power system signals (Liting Han and James F. Peters).

The editors of this volume extend their hearty thanks to the following reviewers: Jan Bazan, Mohua Banerjee, Maciej Borkowski, Cory Butz, Jerzy W. Grzymała-Busse, Mihir K. Chakraborty, Krzysztof Dembczynski, Salvatore Greco, Bożena Kostek, Churn Jung Liau, Pawan Lingras, Dan Lockery, Sushmita Mitra, Mikhail Ju. Moshkov, Son Nguyen, Hoa Nguyen, Piero Pagliani, Uma Shankar, Zbginiew Suraj, Marcin Szczuka, Sheela Ramanna, Dominik Ślęzak, Jarosław Stepaniuk, Piotr Synak, Piotr Wasilewski, Arkadiuz Wojna, Marcin Wolski, Jakub Wróblewski, Wei Zhi Wu, JingTao Yao, Yiyu Yao, and Wojciech Ziarko.

This issue of *TRS* has been made possible thanks to the laudable efforts of a great many generous persons and organizations. The editors and authors of this volume also extend an expression of gratitude to Alfred Hofmann, Ursula Barth, Christine Günther and the LNCS staff at Springer for their support in making this volume of *TRS* possible. In addition, the editors of this volume extend their thanks to Marcin Szczuka for his consummate skill and care in the compilation of this volume.

April 2008

James F. Peters
Andrzej Skowron

LNCS Transactions on Rough Sets

This journal subline has as its principal aim the fostering of professional exchanges between scientists and practitioners who are interested in the foundations and applications of rough sets. Topics include foundations and applications of rough sets as well as foundations and applications of hybrid methods combining rough sets with other approaches important for the development of intelligent systems.

The journal includes high-quality research articles accepted for publication on the basis of thorough peer reviews. Dissertations and monographs up to 250 pages that include new research results can also be considered as regular papers. Extended and revised versions of selected papers from conferences can also be included in regular or special issues of the journal.

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Table of Contents

Some Rough Consequence Logics and their Interrelations 1
Martin W. Bunder, Mohua Banerjee, and Mihir K. Chakraborty

Local and Global Approximations for Incomplete Data 21
Jerzy W. Grzymała-Busse and Wojciech Rząsa

A Rough Set Approach to Multiple Criteria ABC Analysis 35
Ye Chen, Kevin W. Li, Jason Levy, Keith W. Hipel, and D. Marc Kilgour

Partially Ordered Monads and Rough Sets 53
Patrik Eklund and M. Ángeles Galán

A Rough Sets Approach to the Identification and Analysis of Factors Affecting Biological Control of Leafy Spurge 75
Mohamed T. Elhadi and Wojciech Ziarko

Interpretation of Extended Pawlak Flow Graphs Using Granular Computing 93
Huawen Liu, Jigui Sun, and Huijie Zhang

Generalized Indiscernibility Relations: Applications for Missing Values and Analysis of Structural Objects 116
Wojciech Jaworski

A Categorical Approach to Mereology and Its Application to Modelling Software Components 146
Dai Tri Man Lê and Ryszard Janicki

Esoteric Rough Set Theory: Algebraic Semantics of a Generalized VPRS and VPFRS 175
A. Mani

Domain Knowledge Assimilation by Learning Complex Concepts 224
Tuan Trung Nguyen

Information Quanta and Approximation Operators: Once More Around the Track 237
Marcin Wolski

On Partial Covers, Reducts and Decision Rules 251
Mikhail Ju. Moshkov, Marcin Piliszczuk, and Beata Zielosko

Evolutionary Rough k-Medoid Clustering 289
Georg Peters, Martin Lampart, and Richard Weber

The Rough Set Database System 307
Zbigniew Suraj and Piotr Grochowalski

A Model of User-Oriented Reduct Construction for Machine Learning 332
Yiyu Yao, Yan Zhao, Jue Wang, and Suqing Han

Research on Rough Set Theory and Applications in China 352
Guoyin Wang, Qinghua Zhang, Houkuan Huang, Dongyi Ye, Qinghua Hu, Xuegang Hu, Zhongzhi Shi, Yongli Li, Lin Shang, Liping An, Ying Sai, Shanben Chen, Jiye Liang, Keyun Qin, Huanglin Zeng, Keming Xie, Duoqian Miao, Fan Min, Zhaocong Wu, Weizhi Wu, and Jianhua Dai

Rough Neural Fault Classification of Power System Signals 396
Liting Han and James F. Peters

Author Index 521