Lecture Notes in Computer Science 5390

Commenced Publication in 1973
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Transactions on Rough Sets IX

Springer

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Library of Congress Control Number: 2008942076

CR Subject Classification (1998): F.4.3, I.5, H.2.8, I.2, G.2

LNCS Sublibrary: SL 1 – Theoretical Computer Science and General Issues

ISSN 0302-9743 (Lecture Notes in Computer Science)
ISSN 1861-2059 (Transaction on Rough Sets)
ISBN-10 3-540-89875-1 Springer Berlin Heidelberg New York
ISBN-13 978-3-540-89875-7 Springer Berlin Heidelberg New York

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Printed in Germany

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India
Printed on acid-free paper SPIN: 12586622 06/3180 5 4 3 2 1 0

Preface

Volume IX of the Transactions on Rough Sets (TRS) provides evidence of the continuing growth of a number of research streams that were either directly or indirectly begun by the seminal work on rough sets by Zdzisław Pawlak (1926-2006)[1]. One of these research streams inspired by Prof. Pawlak is rough set-based intelligent systems, a topic that was an important part of his early 1970s work on knowledge description systems prior to his discovery of rough sets during the early 1980s. Evidence of intelligent systems as a recurring motif over the past two decades can be found in the rough-set literature that now includes over 4,000 publications by more than 1,600 authors in the rough set database[2].

This volume of the TRS includes articles that are extensions of papers included in the first conference on Rough Sets and Intelligent Systems Paradigms[3]. In addition to research on intelligent systems, this volume also presents papers that reflect the profound influence of a number of other research initiatives by Zdzisław Pawlak.

In particular, this volume introduces a number of new advances in the foundations and applications of artificial intelligence, engineering, image processing, logic, mathematics, medicine, music, and science. These advances have significant implications in a number of research areas such as attribute reduction, approximation schemes, category-based inductive reasoning, classifiers, classifying mappings, context algebras, data mining, decision attributes, decision rules, decision support, diagnostic feature analysis, EEG classification, feature analysis, granular computing, hierarchical classifiers, indiscernibility relations, information granulation, information systems, musical rhythm retrieval, probabilistic dependencies, reducts, rough-fuzzy C-means, rough inclusion functions, roughness, singing voice recognition, and vagueness. A total of 47 researchers are represented in this volume.

This volume 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 the 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.

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

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

[3] Int. Conf. on Rough Sets and Emerging Intelligent Systems Paradigms, *Lecture Notes in Artificial Intelligence* 4585. Springer, Berlin, 2007.

The editors of this volume were supported by the by the Ministry of Science and Higher Education of the Republic of Poland, research grants No. NN516 368334 and 3T11C 002 29, by the by Ministry of Regional Development of the Republic of Poland, grant "Decision Support - New Generation Systems" of Innovative Economy Operational Programme 2007-2013 (Priority Axis 1. Research and development of new technologies), and the Natural Sciences and Engineering Research Council of Canada (NSERC) research grant 185986.

October 2008

Henryk Rybiński
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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