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# Rough Sets and Knowledge Technology

4th International Conference, RSKT 2009  
Gold Coast, Australia, July 14-16, 2009  
Proceedings



 Springer

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Library of Congress Control Number: Applied for

CR Subject Classification (1998): H.3, F.4, F.1, H.4, I.2

LNCS Sublibrary: SL 7 – Artificial Intelligence

ISSN 0302-9743  
ISBN-10 3-642-02961-2 Springer Berlin Heidelberg New York  
ISBN-13 978-3-642-02961-5 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: 12715138 06/3180 5 4 3 2 1 0

## Preface

The Rough Sets and Knowledge Technology (RSKT) conferences serve as a major forum that brings researchers and industry practitioners together to discuss and deliberate on fundamental issues of knowledge processing and management and knowledge-intensive practical solutions in the current knowledge age. Experts from around the world meet annually to present state-of-the-art scientific results, to nurture academic and industrial interaction, and to promote collaborative research in rough sets and knowledge technology. The main theme of the RSKT conference is to explore the synergy between rough sets and advanced knowledge technology and applications, including knowledge discovery, data mining, knowledge processing and management, granular computing, evolutionary computing, biocomputing and bioinformatics, cognitive computing and cognitive informatics, natural and artificial intelligence, Web intelligence, complex systems, and many others.

The first RSKT conference was held in 2006 in Chongqing, P.R. China, followed by RSKT 2007 in Toronto, Canada and RSKT 2008 in Chengdu, P.R. China. This volume contains the papers selected for presentation at the 4th International Conference on Rough Sets and Knowledge Technology (RSKT 2009), which was held during July 14-16 on the Gold Coast, Australia.

Following the success of the previous conferences, RSKT 2009 continued the tradition of a very strict quality control policy in selecting and publishing excellent papers. A double-blind review process was adopted and each paper was evaluated by at least two reviewers. A decision of acceptance, conditional acceptance, or rejection was made for each paper. The conditionally accepted papers went through a second round and only top-quality revised papers were finally accepted. From 229 papers submitted from 29 countries/regions, the Program Committee accepted 85 papers for inclusion in this volume. The acceptance rate is 37%. We would like to thank all authors for submitting their best results and the Steering Committee members, Program Committee members, and external reviewers for their invaluable contributions in the review process.

The RSKT 2009 technical program focused on the following research topics:

- Rough Sets and Computing
- Rough Sets and Data Reduction
- Data Mining and Knowledge Discovery
- Granular Computing and Cognitive Computing
- Fuzzy Sets and Computing
- Rough Sets and Fuzzy Sets
- Knowledge Technology and Intelligent Systems
- Computational Intelligence and Applications
- Image Processing and Understanding
- Formal Concept Analysis

- Decision-Theoretic Rough Sets
- Web Mining and Web Recommender Systems

The program was further enriched by three keynote papers and two special sessions. We are grateful to our keynote speakers, David Powers, Andrzej Skowron, and Guoyin Wang, for their visionary talks on rough sets and knowledge technology. We express our sincere thanks to Joseph P. Herbert and Pawan Lingras, for great efforts in organizing the special session Decision-Theoretic Rough Sets; and Yue Xu and Raymond Y.K. Lau, for their great efforts in organizing the special session Web Mining and Web Recommender Systems.

We wish to express our deep appreciation to the Honorary Chair, Lotfi A. Zadeh, the Conferences Chairs, Frank Bullen and Peter Bruza, Workshop Chairs, David Powers and Richard Watson, Special Session Chairs, Duoqian Miao, Jing-Tao Yao, and Wojciech Ziarko, Publicity Chairs, Yue Xu, Chumin Li, and Jerzy W. Grzymala-Busse, Local Organizing Chairs, Yan Li, Michael Blumenstein, and Shlomo Geva, and Steering Committee Chairs, Guoyin Wang, Andrzej Skowron, Mark Toleman, Jiannong Cao, for their great support and contributions. We would also like to acknowledge Feng Hu, Jin Dai, Xiaohui Tao, and Tianshu Peng for their valuable assistance.

We greatly appreciate the co-operation, support, and sponsorship of various institutions, companies, and organizations, including the University of Southern Queensland, Australia, Queensland University of Technology, Australia, Chongqing University of Posts and Telecommunications, China, University of Regina, Canada, International Rough Set Society (IRSS), and the Rough Sets and Soft Computation Society of the Chinese Association for Artificial Intelligence (CRSSC).

We are thankful to Alfred Hofmann and his team at Springer for their support and co-operation during the preparation of this volume.

April 2009

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