



The Third International Conference on
Rough Sets and Knowledge Technology
(RSKT 2008)

Program

May 16-19, 2008, Chengdu, China

Organizations and Sponsoring Institutions

- ✧ Southwest Jiaotong University (SWJTU)
- ✧ Beijing Institute of Technology (BIT)
- ✧ Chongqing University of Posts and Telecommunications (CQUPT)
- ✧ University of Regina (UofR)
- ✧ International Rough Set Society (IRSS)
- ✧ Rough Sets and Soft Computation Society of the Chinese Association for Artificial Intelligence (CRSSC)
- ✧ IEEE Chengdu Section

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May 16-19, 2008. Southwest Jiaotong University, Chengdu, China.
Program at Glance

Friday, May 16, 2008	
10:00-18:00	Registration: The First Floor Hall, Mirror Lake Hotel in the campus of Southwest Jiaotong University
08:30-10:00	Tutorial 1 A. Skowron
10:20-11:50	Tutorial 3 H. S. Nguyen
12:10-13:10	Lunch (ROOM3)
14:30-16:00	Tutorial 5 R. Slowinski
16:20-17:50	Tutorial 7 S. Greco
18:30-20:00	Welcome Reception (ROOM3)
Saturday, May 17, 2008	
08:00-08:20	Registration: The First Floor Hall, Mirror Lake Hotel in the campus of Southwest Jiaotong University
08:30-09:00	Welcome and Opening Ceremony (ROOM0)
09:00-10:00	Keynote 1 R. Q. Lu (ROOM0)
10:00-10:20	Coffee break
10:20-11:20	Keynote 2 W. Pedrycz (ROOM0)
11:20-12:20	Keynote 3 F. Y. Wang (ROOM0)
12:30-13:30	Lunch (ROOM3)
14:00-15:50	Session 1 (ROOM1)
15:50-16:10	Coffee break
16:10-18:00	Session 3 (ROOM1)
18:30-19:30	Dinner (ROOM3)
Sunday, May 18, 2008	
08:30-10:20	Session 5 (ROOM1)
10:20-10:40	Coffee break
10:40-12:30	Session 7 (ROOM1)
12:30-13:30	Lunch (ROOM3)
14:00-15:50	Session 9 (ROOM1)
15:50-16:10	Coffee break
16:10-18:00	Session 11 (ROOM1)
18:30-19:30	Dinner (ROOM3)
Monday, May 19, 2008	
08:30-10:20	Session 13 (ROOM1)
10:20-10:40	Coffee break
10:40-12:30	Session 15 (ROOM1)
12:30-13:30	Lunch (ROOM3)
13:40-18:00	Visiting Giant Panda Research Base (by bus in front of Mirror Lake Hotel)
18:30-20:30	Closing Ceremony & Banquet (ROOM3)

Events Highlights:

Registration: The First Floor Hall, Mirror Lake Hotel, Southwest Jiaotong University. 西南交通大学镜湖宾馆一楼大厅

Welcome and Opening Ceremony: International Conference Hall, Network Education College, Southwest Jiaotong University. 西南交通大学 网络教育学院一楼国际会议厅

Tutorials: Yifu building, Southwest Jiaotong University. 西南交通大学逸夫馆

Keynotes: International Conference Hall, Network Education College, Southwest Jiaotong University. 西南交通大学 网络教育学院一楼国际会议厅

Sessions: The First Floor, Mirror Lake Hotel, Southwest Jiaotong University. 西南交通大学 镜湖宾馆一楼

Locations:

ROOM0: International Conference Hall, Network Education College, Southwest Jiaotong University. 西南交通大学 网络教育学院一楼国际会议厅

ROOM1: Multifunctional Room. The First Floor, Mirror Lake Hotel, Southwest Jiaotong University. 西南交通大学 镜湖宾馆一楼多功能厅

ROOM2: Academician Room. The First Floor, Mirror Lake Hotel, Southwest Jiaotong University. 西南交通大学 镜湖宾馆一楼院士厅

ROOM3: Dining-room. The First Floor of Mirror Lake Hotel, Southwest Jiaotong University. 西南交通大学镜湖宾馆一楼餐厅

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Program

Friday, May 16, 2008	
10:00-18:00	Registration: The First Floor Hall, Mirror Lake Hotel in the campus of Southwest Jiaotong University
Tutorial Chairs: Qi Dai, Wojciech Ziarko	
Location:	
08:30-10:00	Tutorial 1 Rough Set Approach to KDD (1) <i>Andrzej Skowron</i>
10:20-11:50	Tutorial 3 Rough Set Approach to KDD (2) <i>Hung Son Nguyen</i>
Tutorial Chairs: Shusaku Tsumoto, Yan Yang	
Location:	
08:30-10:00	Tutorial 2 Introduction to 3DM: Domain-oriented Data-driven Data Mining <i>Guoyin Wang</i>
10:20-11:50	Tutorial 4 Granular Computing: Past, Present and Future <i>Yiyu Yao</i>
12:10-13:10	Lunch
Tutorial Chairs: Jingtao Yao, Yan Zhu	
Location:	
14:30-16:00	Tutorial 5 Dominance-based Rough set Approach to Reasoning about Ordinal Data <i>Roman Slowinski</i>
16:20-17:50	Tutorial 7 Applications of Dominance-based Rough set Approach <i>Salvatore Greco</i>
Tutorial Chair: Qing Liu	
Location:	
14:30-16:00	Tutorial 6 Rough Logics with Possible Applications to Approximate Reasoning <i>Mihir Kr. Chakraborty</i>
18:30-20:00	Welcome Reception
Saturday, May 17, 2008	
08:00-08:20	Registration: The First Floor Hall, Mirror Lake Hotel in the campus of Southwest Jiaotong University
Chair: Guoyin Wang	
08:30-09:00	Welcome and Opening Ceremony (ROOM0)
Chair: Guoyin Wang	
09:00-10:00	Keynote 1 (ROOM0) Knowware: A Commodity Form of Knowledge <i>Ruqian Lu</i>
10:00-10:20	Coffee break
Chair: Jerzy Grzymala-Busse	
10:20-11:20	Keynote 2 (ROOM0)

	Granular Computing in Multi-agent Systems <i>Witold Pedrycz</i>
Chair: Duoqian Miao	
11:20-12:20	Keynote 3 (ROOM0) Linguistic Dynamic Systems for Computing with Words and Granular Computing <i>Fei-Yue Wang</i>
12:30-13:30	Lunch
Session 1: Rough Sets and Computing (1) Chairs: Jiye Liang, Pawel Terlecki Location: ROOM1	
14:00-15:50	A Comparison of Six Approaches to Discretization—A Rough Set Perspective <i>Piotr Blajdo, Jerzy W. Grzymala-Busse, Zdzislaw S. Hippe, Maksymilian Knap, Teresa Mroczek, and Lukasz Piatek</i> Adaptive Classification with Jumping Emerging Patterns <i>Pawel Terlecki and Krzysztof Walczak</i> Two-Phase Rule Induction from Incomplete Data <i>Huaxiong Li, Yiyu Yao, Xianzhong Zhou, and Bing Huang</i> Comparison of Lazy Classification Algorithms Based on Deterministic and Inhibitory Decision Rules <i>Pawel Delimata, Mikhail Moshkov, Andrzej Skowron, and Zbigniew Suraj</i> Consistency and Fuzziness in Ordered Decision Tables <i>Yuhua Qian, Jiye Liang, Wei Wei, and Feng Wang</i> Fast Knowledge Reduction Algorithms Based on Quick Sort <i>Feng Hu, Guoyin Wang, and Lin Feng</i>
Session 2: Formal Concept Analysis Chairs: Bernhard Ganter, Yiyu Yao Location: ROOM2	
14:00-15:50	Ranking with Partial Orders and Pairwise Comparisons <i>Ryszard Janicki</i> A Novel Approach to Attribute Reduction in Formal Concept Lattices <i>Jing Liu and Ju-Sheng Mi</i> Combination and Decomposition Theories of Formal Contexts Based on Same Attribute Set <i>Ling Wei and Jian-Jun Qi</i> An Approaches for Constructing Concept Lattices <i>Yutian Zhong, Keyun Qin, and Zhengjiang Wu</i> A Novel Deformation Framework for Face Modeling from a Few Control Points <i>Xun Gong and Guoyin Wang</i>
15:50-16:10	Coffee break
Session 3: Rough Sets and Computing (2) Chairs: Yasuo Kudo, Lin Shang Location: ROOM1	
16:10-18:00	Multiple-Source Approximation Systems: Membership Functions and Indiscernibility <i>M. Aquil Khan and Mohua Banerjee</i> Stability Analysis on Rough Set Based Feature Evaluation <i>Qinghua Hu, Jinfu Liu, and Daren Yu</i> Apply a Rough Set-Based Classifier to Dependency Parsing <i>Yangsheng Ji, Lin Shang, Xinyu Dai, and Ruoce Ma</i> Four-Valued Extension of Rough Sets <i>Aida Vitoria, Andrzej Szalas, and Jan Maluszynski</i> A Note on Characteristic Combination Patterns about How to Combine Objects in Object-Oriented Rough Set Models <i>Yasuo Kudo and Tetsuya Murai</i> Game-Theoretic Risk Analysis in Decision-Theoretic Rough Sets <i>Joseph P. Herbert and JingTao Yao</i>
Session 4: Pattern Recognition Chairs: Pawan Lingras, Hong Zheng Location: ROOM2	

16:10-18:00	<p>A Hybrid Feature Selection Approach Based on the Bayesian Network Classifier and Rough Sets <i>Li Pan, Hong Zheng, and Li Li</i></p> <p>Rough Multi-category Decision Theoretic Framework <i>Pawan Lingras, Min Chen, and Duoqian Miao</i></p> <p>Dynamic Features Based Driver Fatigue Detection <i>Xiao Fan, Baocai Yin, and Yanfeng Sun</i></p> <p>An Improved Method of Formula Structural Analysis <i>Xuedong Tian, Fei Wang, and Xiaoyu Liu</i></p> <p>Fuzzy Inspection of Fabric Defects Based on Particle Swarm Optimization (PSO) <i>Juan Liu and Hui Ju</i></p> <p>Kernel Matching Reduction Algorithms for Classification <i>Jianwu Li and Xiaocheng Deng</i></p>
18:30-19:30	Dinner

Sunday, May 18, 2008	
Session 5: Rough Mereology with Applications	
Chairs: Piotr Artiemjew, Lech Polkowski	
Location: ROOM1	
08:30-10:20	<p>Rough Mereology in Analysis of Vagueness <i>Lech Polkowski</i></p> <p>Reasoning about Concepts by Rough Mereological Logics <i>Lech Polkowski and Maria Semeniuk-Polkowska</i></p> <p>On the Idea of Using Granular Rough Mereological Structures in Classification of Data <i>Lech Polkowski</i></p> <p>On Classification of Data by Means of Rough Mereological Granules of Objects and Rules <i>Piotr Artiemjew</i></p> <p>Rough Mereological Classifiers Obtained from Weak Variants of Rough Inclusions <i>Piotr Artiemjew</i></p> <p>Color Image Interpolation Combined with Rough Sets Theory <i>Fengmei Liang and Keming Xie</i></p>
Session 6: Data Mining and Machine Learning	
Chairs: Hidenao Abe, Seunghyun Im	
Location: ROOM2	
08:30-10:20	<p>Analyzing Correlation Coefficients of Objective Rule Evaluation Indices on Classification Rules <i>Hidenao Abe and Shusaku Tsumoto</i></p> <p>Description Logic Based Consistency Checking upon Data Mining Metadata <i>Xiaodong Zhu, Zhiqiu Huang, and Guohua Shen</i></p> <p>LRLW-LSI: An Improved Latent Semantic Indexing (LSI) Text Classifier <i>Wang Ding, Songnian Yu, Shanqing Yu, Wei Wei, and Qianfeng Wang</i></p> <p>Multi-granularity Classification Rule Discovery Using ERID <i>Seunghyun Im, Zbigniew W. Ras, and Li-Shiang Tsay</i></p> <p>Feature Selection on Chinese Text Classification Using Character N-Grams <i>Zhihua Wei, Duoqian Miao, Jean-Hugues Chauchat, and Caiming Zhong</i></p> <p>Minimum Spanning Tree Based Spatial Outlier Mining and Its Applications <i>Jiaxiang Lin, Dongyi Ye, Chongcheng Chen, and Miaoxian Gao</i></p>
10:20-10:40	Coffee break
Session 7: Fuzzy-Rough Hybridization	
Chairs: Chris Cornelis, German Hurtado Martin	
Location: ROOM1	
10:40-12:30	<p>Feature Selection with Fuzzy Decision Reducts <i>Chris Cornelis, German Hurtado Martin, Richard Jensen, and Dominik Slezak</i></p> <p>Rough-Fuzzy Relational Clustering Algorithm for Biological Sequence Mining <i>Pradipta Maji and Sankar K. Pal</i></p> <p>Rough-Fuzzy Clustering: An Application to Medical Imagery <i>Sushmita Mitra and Bishal Barman</i></p> <p>Roughness Measures of Intuitionistic Fuzzy Sets</p>

	<p><i>Lei Zhou, Wen-Xiu Zhang, and Wei-Zhi Wu</i> Intra-cluster Similarity Index Based on Fuzzy Rough Sets for Fuzzy C-Means Algorithm <i>Fan Li, Fan Min, and Qihe Liu</i></p>
<p>Session 8: Data Mining and Machine Learning Chairs: Dongyi Ye, Xianhua Zeng Location: ROOM2</p>	
10:40-12:30	<p>A New Algorithm for High-Dimensional Outlier Detection Based on Constrained Particle Swarm Intelligence <i>Dongyi Ye and Zhaojiong Chen</i> A New Decision Tree Construction Using the Cloud Transform and Rough Sets <i>Jing Song, Tianrui Li, and Da Ruan</i> Applications of Average Geodesic Distance in Manifold Learning <i>Xianhua Zeng</i> Fast Generation of Local Hasse Graphs for Learning from Structurally Connected Instances <i>Wuming Pan</i> Text Categorization Based on Topic Model <i>Shibin Zhou, Kan Li, and Yushu Liu</i> Improved Unsupervised Anomaly Detection Algorithm <i>Na Luo, Fuyu Yuan, Wanli Zuo, Fengling He, and Zhiguo Zhou</i></p>
12:30-13:30	Lunch
<p>Session 9: Dominance-Based Rough Set Approach Chairs: Salvatore Greco, Benedetto Matarazzo Location: ROOM1</p>	
14:00-15:50	<p>Dominance-Based Rough Sets Using Indexed Blocks as Granules <i>Chien-Chung Chan and Gwo-Hshiung Tzeng</i> Algebraic Structures for Dominance-Based Rough Set Approach <i>Salvatore Greco, Benedetto Matarazzo, and Roman Slowinski</i> Ensemble of Decision Rules for Ordinal Classification with Monotonicity Constraints <i>Krzysztof Dembczynski, Wojciech Kotlowski, and Roman Slowinski</i> Case-Based Reasoning Using Gradual Rules Induced from Dominance-Based Rough Approximations <i>Salvatore Greco, Benedetto Matarazzo, and Roman Slowinski</i> The Incremental Learning Methodology of VPRS Based on Complete Information System <i>Dun Liu, Pei Hu, and Chaozhe Jiang</i></p>
<p>Session 10: Web Intelligence and Intelligent Information Processing Chairs: Lisa Fan, Yan Zhu Location: ROOM2</p>	
14:00-15:50	<p>VisoLink: A User-Centric Social Relationship Mining <i>Lisa Fan and Botang Li</i> Question Answering System Based on Ontology and Semantic Web <i>Qinglin Guo and Ming Zhang</i> Group Assessment of Web Source/Information Quality Based on WebQM and Fuzzy Logic <i>Yan Zhu</i> A Time Weighted Neighbourhood Counting Similarity for Time Series Analysis <i>Hui Wang and Zhiwei Lin</i> Reasoning Problems on Distributed Fuzzy Ontologies <i>Bo Zhou, Jianjiang Lu, Yanhui Li, Yafei Zhang, and Dazhou Kang</i> An Approach for Kernel Selection Based on Data Distribution <i>Wenjian Wang, Jinling Guo, and Changqian Men</i></p>
15:50-16:10	Coffee break
<p>Session 11: Granular Computing Chairs: Dusan Marcek, Yanqing Zhang Location: ROOM1</p>	
16:10-18:00	<p>Approximation and Prediction of Wages Based on Granular Neural Network <i>Milan Marcek and Dusan Marcek</i></p>

	<p>A New SVM-Based Decision Fusion Method Using Multiple Granular Windows for Protein Secondary Structure Prediction <i>Anjum Reyaz-Ahmed and Yanqing Zhang</i></p> <p>Hierarchical Clustering of Non-Euclidean Relational Data Using Indiscernibility-Level <i>Shoji Hirano and Shusaku Tsumoto</i></p> <p>Online Granular Prediction Model for Web Prefetching <i>Zhimin Gu, Zhijie Ban, Hongli Zhang, Zhaolei Duan, and Xiaojin Ren</i></p> <p>Axiomatic Definition of Knowledge Granularity and Its Constructive Method <i>Ming-qing Zhao, Qiang Yang, and De-zhi Gao</i></p>
<p>Session 12: Soft Computing Chairs: Guiwu Wei, Jiucheng Xu Location: ROOM2</p>	
16:10-18:00	<p>Multi-agent Based Multi-knowledge Acquisition Method for Rough Set <i>Yang Liu, Guohua Bai, and Boqin Feng</i></p> <p>Induced Intuitionistic Fuzzy Ordered Weighted Averaging Operator and Its Application to Multiple Attribute Group Decision Making <i>Guiwu Wei</i></p> <p>Dependent Uncertain Linguistic OWA Operator <i>Guiwu Wei</i></p> <p>Knowledge-Based Genetic Algorithms <i>Gaowei Yan, Gang Xie, Zehua Chen, and Keming Xie</i></p> <p>Rough Cluster Algorithm Based on Kernel Function <i>Tao Zhou, Yanning Zhang, Huiling Lu, Fang'an Deng, and Fengxiao Wang</i></p> <p>New Reduction Algorithm Based on Decision Power of Decision Table <i>Jiucheng Xu and Lin Sun</i></p> <p>A Heuristic Algorithm Based on Attribute Importance for Feature Selection <i>Xingbo Sun, Xiuhua Tang, Huanglin Zeng, and Shunyong Zhou</i></p>
18:30-19:30	Dinner

Monday, May 19, 2008	
<p>Session 13: Logical and Mathematical Foundations (1) Chairs: Gianpiero Cattaneo, Mihir K. Chakraborty Location: ROOM1</p>	
08:30-10:20	<p>Intuitionistic Fuzzy Approximations and Intuitionistic Fuzzy Sigma-Algebras <i>Wei-Zhi Wu and Lei Zhou</i></p> <p>A Hierarchical Lattice Closure Approach to Abstract Rough Approximation Spaces <i>Gianpiero Cattaneo and Davide Ciucci</i></p> <p>A Unifying Abstract Approach for Rough Models <i>Davide Ciucci</i></p> <p>Quorum Based Data Replication in Grid Environment <i>Rohaya Latip, Hamidah Ibrahim, Mohamed Othman, Md Nasir Sulaiman, and Azizol Abdullah</i></p> <p>On Non-pointwise Entropies of Coverings: Relationship with Anti-monotonicity <i>Daniela Bianucci and Gianpiero Cattaneo</i></p>
<p>Session 14: Bioinformatics and Cognitive Informatics Chairs: Ibrahim Akman, Jiali Feng Location: ROOM2</p>	
08:30-10:20	<p>Phylogenetic Trees Dissimilarity Measure Based on Strict Frequent Splits Set and Its Application for Clustering <i>Jakub Koperwas and Krzysztof Walczak</i></p> <p>A Multicriteria Model Applied in the Diagnosis of Alzheimer's Disease <i>Ana Karoline Araujo de Castro, Placido Rogerio Pinheiro, and Mirian Caliope Dantas Pinheiro</i></p> <p>A New Complexity Metric Based on Cognitive Informatics <i>Sanjay Misra and Ibrahim Akman</i></p> <p>Efficient Gene Selection with Rough Sets from Gene Expression Data <i>Lijun Sun, Duoqian Miao, and Hongyun Zhang</i></p> <p>Combined Analysis of Resting-State fMRI and DTI Data Reveals Abnormal Development of Function-Structure in Early-Onset Schizophrenia</p>

	<i>Ming Ke, Xing Huang, Hui Shen, Zongtan Zhou, Xiaogang Chen, and Dewen Hu</i> Qualitative Mapping Model of Pattern Recognition <i>Jiali Feng</i>
10:20-10:40	Coffee break
Session 15: Logical and Mathematical Foundations (2) Chairs: Gianpiero Cattaneo, Mihir K. Chakraborty Location: ROOM1	
10:40-12:30	A Family of Fuzzy Description Logics with Comparison Expressions <i>Jianjiang Lu, Dazhou Kang, Yafei Zhang, Yanhui Li, and Bo Zhou</i> Soft Sets and Soft Modules <i>Qiu-Mei Sun, Zi-Long Zhang, and Jing Liu</i> The Separation of Duty with Privilege Calculus <i>Chenggong Lv, Jun Wang, Lu Liu, and Weijia You</i> Maximal Invariable Update Operator Based on Splitting <i>Maonian Wu and Mingyi Zhang</i>
Session 16: Real-Life Applications of Knowledge Technology Chairs: Dan Meng, Georg Peters Location: ROOM2	
10:40-12:30	An Application of Rough Set Concepts to Workflow Management <i>Georg Peters, Roger Tagg, and Richard Weber</i> Rule Extraction Method in Incomplete Decision Table for Fault Diagnosis Based on Discernibility Matrix Primitive <i>Wentao Huang, Weijie Wang, and Xuezeng Zhao</i> Password-Based Tripartite Key Exchange Protocol with Forward Secrecy <i>Guomin Li, Dake He, and Wei Guo</i> Credit Rating Method with Heterogeneous Information <i>Dan Meng and Yang Xu</i> The K Shortest Transit Paths Choosing Algorithm in Stochastic Transit Network <i>Liyuan Zhao, Yiliang Xiong, and Hong Sun</i> Optimization on OLSR Protocol for Lower Routing Overhead <i>Yong Xue, Hong Jiang, and Hui Hu</i>
12:30-13:30	Lunch
13:40-18:00	Visiting Giant Panda Research Base (by bus in front of Mirror Lake Hotel)
18:30-20:30	Closing ceremony & banquet Chairs: Andrzej Skowron, Yiyu Yao Location: ROOM3