Van-Nam Huynh · Masahiro Inuiguchi
Thierry Denoeux (Eds.)

Integrated Uncertainty in Knowledge Modelling and Decision Making

4th International Symposium, IUKM 2015
Nha Trang, Vietnam, October 15–17, 2015
Proceedings

Springer

Contents

Keynote and Invited Talks

Epistemic Uncertainty Modeling: The-state-of-the-art 1
Hung T. Nguyen

Fuzzy Sets, Multisets, and Rough Approximations 11
Sadaaki Miyamoto

What Is Fuzzy Natural Logic: Abstract 15
Vilém Novák

Contributed Papers

Combining Fuzziness and Context Sensitivity in Game Based Models of Vague Quantification 19
Christian G. Fermüller

A New Model of a Fuzzy Associative Memory 32
Irina Perfilieva

Construction of Associative Functions for Several Fuzzy Logics via the Ordinal Sum Theorem 43
Mayuka F. Kawaguchi and Michiro Kondo

Cognitively Stable Generalized Nash Equilibrium in Static Games with Unawareness 54
Yasuo Sasaki

Maximum Lower Bound Estimation of Fuzzy Priority Weights from a Crisp Comparison Matrix 65
Tomoe Entani and Masahiro Inuiguchi

Logarithmic Conversion Approach to the Estimation of Interval Priority Weights from a Pairwise Comparison Matrix 77
Masahiro Inuiguchi and Shigeaki Innan

An Effective Method for Optimality Test Over Possible Reaction Set for Maximin Solution of Bilevel Linear Programming with Ambiguous Lower-Level Objective Function 89
Puchit Sariddichainunta and Masahiro Inuiguchi

Proposal of Grid Area Search with UCB for Discrete Optimization Problem 102
Akira Notsu, Koki Saito, Yuhumi Nohara, Seiki Ubukata, and Katsuhiro Honda

Why Copulas Have Been Successful in Many Practical Applications: A Theoretical Explanation Based on Computational Efficiency 112
Vladik Kreinovich, Hung T. Nguyen, Songsak Sriboonchitta, and Olga Kosheleva

A New Measure of Monotone Dependence by Using Sobolev Norms for Copula 126
Hien D. Tran, Uyen H. Pham, Sel Ly, and T. Vo-Duy

Why ARMAX-GARCH Linear Models Successfully Describe Complex Nonlinear Phenomena: A Possible Explanation 138
Hung T. Nguyen, Vladik Kreinovich, Olga Kosheleva, and Songsak Sriboonchitta

A Copula-Based Stochastic Frontier Model for Financial Pricing. 151
Phachongchit Tibprasorn, Kittawit Autchariyapanitkul, Somsak Chaniam, and Songsak Sriboonchitta

Capital Asset Pricing Model with Interval Data. 163
Sutthiporn Piamsuwannakit, Kittawit Autchariyapanitkul, Songsak Sriboonchitta, and Rujira Ouncharoen

Confidence Intervals for the Difference Between Normal Means with Known Coefficients 171
Suparat Niwitpong and Sa-Aat Niwitpong

Approximate Confidence Interval for the Ratio of Normal Means with a Known Coefficient of Variation 183
Wararit Panichkitkosolkul

Confidence Intervals for the Ratio of Coefficients of Variation of the Gamma Distributions. 193
Patarawan Sangnawakij, Sa-Aat Niwitpong, and Suparat Niwitpong

A Deterministic Clustering Framework in MMMs-Induced Fuzzy Co-Clustering 204
Shunnya Oshio, Katsuhiro Honda, Seiki Ubukata, and Akira Notsu

FCM-type Co-clustering Transfer Reinforcement Learning for Non-Markov Processes 214
Akira Notsu, Takanori Ueno, Yuichi Hattori, Seiki Ubukata, and Katsuhiro Honda

MMMs-Induced Fuzzy Co-clustering with Exclusive Partition Penalty on Selected Items 226
Takaya Nakano, Katsuhiro Honda, Seiki Ubukata, and Akira Notsu

Clustering Data and Vague Concepts Using Prototype Theory Interpreted Label Semantics 236
Hanqing Zhao and Zengchang Qin

An Ensemble Learning Approach Based on Rough Set Preserving the Qualities of Approximations 247
Seiki Ubukata, Taro Miyazaki, Akira Notsu, Katsuhiro Honda, and Masahiro Inuiguchi

Minimum Description Length Principle for Compositional Model Learning 254
Radim Jiroušek and Iva Krejčová

On the Property of SIC Fuzzy Inference Model with Compatibility Functions 267
Hirosato Seki

Applying Covering-Based Rough Set Theory to User-Based Collaborative Filtering to Enhance the Quality of Recommendations 279
Zhipeng Zhang, Yasuo Kudo, and Tetsuya Murai

Evidence Combination Focusing on Significant Focal Elements for Recommender Systems 290
Van-Doan Nguyen and Van-Nam Huynh

A Multifaceted Approach to Sentence Similarity 303
Hien T. Nguyen, Phuc H. Duong, and Tuan Q. Le

Improving Word Alignment Through Morphological Analysis 315
Vuong Van Bui, Thanh Trung Tran, Nhat Bich Thi Nguyen, Tai Dinh Pham, Anh Ngoc Le, and Cuong Anh Le

Learning Word Alignment Models for Kazakh-English Machine Translation 326
Amandyk Kartbayev

Application of Uncertainty Modeling Frameworks to Uncertain Isosurface Extraction 336
Mahsa Mirzargar, Yanyan He, and Robert M. Kirby

On Customer Satisfaction of Battery Electric Vehicles Based on Kano Model: A Case Study in Shanghai 350
Yanping Yang, Hong-Bin Yan, and Tieju Ma

Co-movement and Dependency Between New York Stock Exchange, London Stock Exchange, Tokyo Stock Exchange, Oil Price, and Gold Price 362
Pathairat Pastpipatkul, Woraphon Yamaka, and Songsak Sriboonchitta

Spillovers of Quantitative Easing on Financial Markets of Thailand, Indonesia, and the Philippines. 374
Pathairat Pastpipatkul, Woraphon Yamaka, Aree Wiboonpongse, and Songsak Sriboonchitta

Impacts of Quantitative Easing Policy of United States of America on Thai Economy by MS-SFABVAR 389
Pathairat Pastpipatkul, Warawut Ruankham, Aree Wiboonpongse, and Songsak Sriboonchitta

Volatility and Dependence for Systemic Risk Measurement of the International Financial System 403
Jianxu Liu, Songsak Sriboonchitta, Panisara Phochanachan, and Jiechen Tang

Business Cycle of International Tourism Demand in Thailand: A Markov-Switching Bayesian Vector Error Correction Model. 415
Woraphon Yamaka, Pathairat Pastpipatkul, and Songsak Sriboonchitta

Volatility Linkages Between Price Returns of Crude Oil and Crude Palm Oil in the ASEAN Region: A Copula Based GARCH Approach. 428
Teera Kiatmanaroch, Ornanong Puarattanaarunkorn, Kittawit Autchariyapanitkul, and Songsak Sriboonchitta

The Economic Evaluation of Volatility Timing on Commodity Futures Using Periodic GARCH-Copula Model 440
Xue Gong, Songsak Sriboonchitta, and Jianxu Liu

On the Estimation of Western Countries' Tourism Demand for Thailand Taking into Account of Possible Structural Changes Leading to a Better Prediction. 452
Nyo Min and Songsak Sriboonchitta

Welfare Measurement on Thai Rice Market: A Markov Switching Bayesian Seemingly Unrelated Regression 464
Pathairat Pastpipatkul, Paravee Maneejuk, and Songsak Sriboonchitta

Modeling Daily Peak Electricity Demand in Thailand 478
Jirakom Sirisrisakulchai and Songsak Sriboonchitta

Author Index 489