The 6th International Symposium on
Integrated Uncertainty in Knowledge Modelling and Decision Making

Hanoi, Vietnam, March 15 – 17, 2018

HANOI NATIONAL UNIVERSITY OF EDUCATION

136 Xuan Thuy Str, Cau Giay, Hanoi

IUKM 2018

THU, 15TH MARCH (morning)

7:30 – 8:30 Registration

8:30 – 9:00 Opening [Conference Hall, 2nd floor, K1 Building]

[General Chairs, PC Chairs, Local Organization Chairs]

9:00 – 10:00 Plenary 1 [Conference Hall]

Using Statistical Machine Learning Techniques to Analyze Satellite Optical Signature
Phan DAO, U.S. Air Force Research Laboratory, USA
Chair: **Akira NAMATAME**

10:00 – 10:30 Coffee break [2nd floor of K1 Building opposite to the Conference Hall]

10:30 – 12:10 Parallel Session A: **Uncertainty Management and Decision Support I [Room 201]**
Chair: **Masahiro INUIGUCHI**

A Granularity Approach to Vague Quantification
Christian G. Fermuller

Do It Today or Do It Tomorrow: Empirical Non-Exponential Discounting Explained by Symmetry Ideas
Francisco Zapata, Olga Kosheleva, Vladik Kreinovich, Thongchai Dumrongpokaphan

Linguistic Summarization Based on the Inherent Semantics of Linguistic Words
Thi Lan Pham, Cam Ha Ho, and Cat Ho Nguyen

Euclidean Distance Matrix Completion Approach to the Discreditably Molecular Distance Geometry Problem with Fuzzy Interval Uncertainty
Weldon A. Lodwick, Luiz L. Salles Neto, Carlile Lavor

10:30 – 12:10 Parallel Session B: **Statistical Methods I [Room 202]**
Chair: **Roengchai TANSUCHAT**

On a Generalized Method of Combining Predictive Distributions for Stock Market Index
Son Phuc Nguyen, Uyen Hoang Pham, Thien Dinh Nguyen

Pairs Trading via Nonlinear Autoregressive GARCH Models
Benchawanaree Chodchuangnirun, Kongliang Zhu, Woraphon Yamaka

A Regime Switching for Dynamic Conditional Correlation and GARCH: Application to Agricultural Commodity Prices and Market Risks
Benchawanaree Chodchuangnirun, Woraphon Yamaka, Chatchai Khiewngamdee

Quantum Econometrics: How to Explain Its Quantitative Successes and How the Resulting Formulas Are Related to Scale Invariance, Entropy, and Fuzziness
Kittawit Autchariyapanitkul, Olga Kosheleva, Vladik Kreinovich, Songsak Sriboonchitta

12:10 – 13:30 Lunch [2nd floor of K1 Building opposite to the Conference Hall]

THU, 15TH MARCH (afternoon)

13:30 – 14:30 Plenary 2 [Conference Hall]

Computational Decision Making and Data Science - Challenges and Opportunities
Pedja NESKOVIC, Office of Naval Research, USA
Chair: **Hiekeun KO**

14:30 – 15:00 Coffee break [2nd floor of K1 Building opposite to the Conference Hall]

15:00 – 17:05 Parallel Session A: **Statistical Methods II [Room 201]**

Chair: **Kittawit AUTCHARIYAPANITKUL**

Modeling Dependence with Copulas: Are Real Estates and Tourism Associated?
Roengchai Tansuchat, Paravee Maneejuk

A Markov-switching Model with Mixture Distribution Regimes
Paravee Maneejuk, Woraphon Yamaka, Songsak Sriboonchitta

Estimation of Volatility on the Small Sample with Generalized Maximum Entropy
Quanrui Song, Songsak Sriboonchitta, Somsak Chanaim, Chongkolnee Rungruang

Estimating and Predicting Financial Series by Entropy-based Inferential Model
Tanarat Rattanadamrongaksorn, Duangthip Sirikanchanarak, Jirakom Sirisrisakulchai, Songsak Sriboonchitta

Impact of Trade Liberalization on Economic Growth in ASEAN: Copula-based Seemingly Unrelated Regression Model
Arisara Romyen, Jianxu Liu, and Songsak Sriboonchitta

15:00 – 17:05 Parallel Session B: **Clustering and Classification [Room 202]**

Chair: **Le-Minh NGUYEN**

An Efficient Clustering Algorithm Based on Grid Density and Its Application in Human Mobility Analysis
Chonghui Guo, Zhenna Na, Leilei Sun and Xiaoguang Chen

A Multi-class Support Vector Machine Based on Geometric Margin Maximization
Yoshifumi Kusunoki and Keiji Tatsumi

A New Context-Based Similarity Measure for Categorical Data Using Information Theory
Thanh-Phu Nguyen, Mina Ryoke, Van-Nam Huynh

Vector Representation of Abstract Program Tree for Assessing Algorithm Variety for the Same Purpose
Yoshiki Mashima and Kazuhiro Takeuchi

Comparing Sparse Autoencoders for Acquisition of More Robust Bases in Handwritten Characters
Takuya Okada and Kazuhiro Takeuchi

15:00 – 17:05 Parallel Session C: **Econometric Applications II [Room 203]**

Chair: **Son NGUYEN**

Macroeconomic News Announcement and Thailand Stock Market
Saowaluk Duangin, Woraphon Yamaka, Jirakom Sirisrisakulchai, Songsak Sriboonchitta

European Real Estate Risk and Spillovers: Regime Switching Approach
Nisara Wongutai, Woraphon Yamaka, Roengchai Tansuchat

Volatility Jump Detection in Thailand Stock Market
Saowaluk Duangin, Woraphon Yamaka, Jirakom Sirisrisakulchai, Songsak Sriboonchitta

Efficiency Analysis of Natural Rubber Production in ASEAN: The Comparison of Panel DEA and Bootstrapping Panel DEA Analysis Based Decision on Copula Approach
Kewalin Somboon, Chukiat Chaiboonsri, Songsak Sriboonchitta

Thai Export Efficiency in AFTA: Copula-based Gravity Stochastic Frontier Model with Autocorrelated Inefficiency
Petchaluck Boonyakunakorn, Pathairat Pastpipatkul, Songsak Sriboonchitta

FRI, 16TH MARCH (morning)

8:30 – 9:30 Plenary 3 [Conference Hall]

Toward Nonlinear Statistics based on Choquet Calculus
Michio SUGENO, Tokyo Institute of Technology, JAPAN
Chair: **Yoshiteru NAKAMORI**

9:30 – 10:30 Plenary 4 [Conference Hall]

From Big Data and AI to FinTech
Qiang YE, Harbin Institute of Technology, CHINA
Chair: **Van-Nam HUYNH**

10:30 – 11:00 Coffee break [2nd floor of K1 Building opposite to the Conference Hall]

11:00 – 12:15 Parallel Session A: **Uncertainty Management and Decision Support II [Room 201]**
Chair: **Tomoe ENTANI**

Measuring Efficiency Intervals in Multiple Groups with Privacy Concerns
Tomoe Entani

The Optimizing Algorithm for Economic Cycles in ASEAN Stock Indexes
Satawat Wannapan, Pattaravadee Rakpuang, Chukiat Chaiboonsri

An Evidence Theoretic Approach to Interval Analytic Hierarchy Process
Masahiro Inuiguchi

11:00 – 12:15 Parallel Session B: **Machine Learning Applications I [Room 202]**
Chair: **Anh-Cuong LE**

fMKL-DR: A Fast Multiple Kernel Learning Framework with Dimensionality Reduction
Thanh-Trung Giang, Thanh-Phuong Nguyen, Quoc Vinh Nguyen Tran, Dang-Hung Tran

Sensory Quality Assessment of Food Using Active Learning
Nhat-Vinh Lu, Van-Nam Huynh, Takaya Yuizono and Trung-Ky Nguyen

Technology Adoption Optimization with Heterogeneous Agents and Carbon Emission Trading Mechanism
Chenhao Fang, Tieju Ma

12:15 – 13:45 Lunch [2nd floor of K1 Building opposite to the Conference Hall]

13:45 – 14:45 Plenary 5

Similarly-based Machine Learning Approaches for Predicting Drug-target Interactions

Hiroshi MAMITSUKA, Kyoto University, JAPAN

Chair: **Dang-Hung TRAN**

14:45 – 15:20 Coffee break [2ⁿᵈ floor of K1 Building opposite to the Conference Hall]

15:20 – 17:00 Parallel Session A: **Econometric Applications I [Room 201]**

Chair: **Vladik KREINOVICH**

Investigating Dynamic Correlation in the International Implied Volatility Indexes
Panida Fanpaeng, Woraphon Yamaka and Roengchai Tansuchat

Markov-Switching ARDL Modeling of Parboiled Rice Import Demand from Thailand
Roengchai Tansuchat and Woraphon Yamaka

The Role of Agricultural Commodity Prices in a Portfolio
Chatchai Khiewngamdee, Quanrui Song, Somsak Chanaim

Assessing Consumers' Perceptions of Packaging Attributes and Packaging Label of Community's `Green' Chili (Pepper) Products in Thailand
Jakkreeporn Sannork, Aree Wiboonpongse, Tzong-Ru Lee

15:20 – 17:00 Parallel Session B: **Machine Learning Applications II [Room 202]**

Chair: **Canh-Hao NGUYEN**

An Attention-based Long-Short-Term-Memory Model for Paraphrase Generation
Khuong Nguyen-Ngoc, Anh-Cuong Le, Viet-Ha Nguyen

Deep Neural Network-based Models for Ranking Question - Answering Pairs in Community Question Answering Systems
Van-Tu Nguyen, Anh-Cuong Le

A Hybrid Approach to Answer Selection in Question Answering Systems
Phuc H. Duong, Hien T. Nguyen, Duy D. Nguyen and Hao T. Do

Big Data Driven Architecture for Medical Knowledge Management Systems in Intracranial Hemorrhage Diagnosis
Thi-Hoang-Yen Le, Thuong-Cang Phan and Anh-Cang Phan

15:20 – 17:00 Parallel Session C: **Uncertainty Management and Decision Support III [Room 203]**

Chair: **Hongbin YAN**

Estimation of Interval Probability Distribution in Categorical Data using Maximum Entropy
Bingyi Kang and Yong Deng

A Target-based Decision-making Approach to Competitive Analysis in Uncertain Quality Function Deployment
Hongbin Yan

Building Modelling Methodology Combined to Robust Identification for the Temperature Prediction of a Thermal Zone in a Multi-Zone Building
Van-Binh Dinh, Benoit Delinchant, Frederic Wurtz, Hoang-Anh Dang

A Multi-criteria Analysis Model for Socio-economic and Environmental Evaluation of Renewable Energies: Case Study of Shanghai
Hongtao Ren

17:00 – 18:00 **Move to Sen Tay Ho (West Lake Lotus) Restaurant (614 Lac Long Quan, Hanoi)**
(Bus service is provided)

18:00 – 20:30 **Banquet with a Special Event in Memory of Lotfi Zadeh, the Founder of Fuzzy Sets**

Chair: **Masahiro Inuiguchi**, **Vladik Kreinovich**, **Van-Nam Huynh**

SAT, 17TH MARCH (morning)

9:00 – 11:30 **Scientific Committee Meeting**

Excursion and Social Program (on demand with payment; please contact local organizer for the detail)