

IUKM2022 Program (Final: 9 March, 2022)

18 March, 2022 (Friday)

Japan (GMT+9)	Thailand (GMT+7)	Central European (GMT+1)		
12:40 - 13:05	10:40 - 11:05	4:40 - 5:05	Opening	
13:05 - 14:20	11:05 - 12:20	5:05 - 6:20	Uncertainty Management and Decision Making I (3 papers)	Pattern Classification and Data Analysis I (3 papers)
14:20 - 14:35	12:20 - 12:35	6:20 - 6:35	Break (15 min.)	
14:35 - 15:50	12:35 - 13:50	6:35 - 7:50	Machine Learning I (3 papers)	Pattern Classification and Data Analysis II (3 papers)
15:50 - 16:05	13:50 - 14:05	7:50 - 8:05	Break (15 min.)	
16:05 - 17:45	14:05 - 15:45	8:05 - 9:45	Machine Learning II (4 papers)	Economic Applications I (4 papers)
17:45 - 18:00	15:45 - 16:00	9:45 - 10:00	Break (15 min.)	
18:00 - 19:00	16:00 - 17:00	10:00 - 11:00	Keynote Lecture 1 (Dr. Rudolf Felix)	

19 March, 2022 (Saturday)

Japan (GMT+9)	Thailand (GMT+7)	Central European (GMT+1)		
13:00 - 14:00	11:00 - 12:00	5:00 - 6:00	Keynote Lecture 2 (Prof. Motohide Umano)	
14:00 - 14:15	12:00 - 12:15	6:00 - 6:15	Break (15 min.)	
14:15 - 15:55	12:15 - 13:55	6:15 - 7:55	Economic Applications II (4 papers)	Optimization and Statistical Methods I (4 papers)
15:55 - 16:10	13:55 - 14:10	7:55 - 8:10	Break (15 min.)	
16:10 - 17:50	14:10 - 15:50	8:10 - 9:50	Uncertainty Management and Decision Making II (4 papers)	Optimization and Statistical Methods II (4 papers)
17:50 - 18:05	15:50 - 16:05	9:50 - 10:05	Break (15 min.)	
18:05 - 19:05	16:05 - 17:05	10:05 - 11:05	Keynote Lecture 3 (Prof. Salvatore Greco)	
19:05 - 19:20	17:05 - 17:20	11:05 - 11:20	Closing	

Regular presentation: 20 min. talk + 5 min. discussion

Short presentation: 15 min. talk + 5 min. discussion

Friday 18 March 2022

12:40 - 13:05 Opening

13:05 - 14:20 **General Session Room A: Uncertainty Management and Decision Making I**

(Chair: Prof. Van-Nam Huynh)

1. The Lattice Structure of Coverings in an Incomplete Information Table with Value Similarity
[ID 32](#) (Michinori Nakata, Norio Saito, Hiroshi Sakai, and Takeshi Fujiwara)
2. Group Formation Models Based on Inner Evaluations of Members
[ID 19](#) (Tomoe Entani)
3. A Data-driven Weighting Method Based on DEA Model for Evaluating Innovation
[ID 31](#) (Nu Dieu Khue Ngo and Van Nam Huynh)

General Session Room B: Pattern Classification and Data Analysis I

(Chair: Dr. Seiki Ubukata)

1. On Some Fuzzy Clustering Algorithms for Time-Series Data
[ID 7](#) (Mizuki Fujita and Yuchi Kanzawa)
2. On an Multi-directional Searching Algorithm for Two Fuzzy Clustering Methods for Categorical Multivariate Data
[ID 8](#) (Kazune Suzuki and Yuchi Kanzawa)
3. Hybrid Rule-Based Classification by Integrating Expert Knowledge and Data
[ID 11](#) (Lianmeng Jiao, Haonan Ma, and Quan Pan)

14:20 - 14:35 Break

14:35 - 15:50 **General Session Room A: Machine Learning I**

(Chair: Dr. Warut Pannakkong)

1. Toward Latent Cognizance on Open-set Recognition
[ID 5](#) (Pisit Nakjai and Tatpong Katanyukul)
2. A Genetic Algorithm Based Artificial Neural Network for Production Rescheduling Problem
[ID 26](#) (Pakkaporn Saophan and Warut Pannakkong)
3. Backtracking Approaches to k-anonymous Rule Induction Method for Binary Classified Data Tables **(Short Presentation)**
[ID 45](#) (Taichi Chujo and Masahiro Inuiguchi)

General Session Room B: Pattern Classification and Data Analysis II

(Chair: Dr. Yoshifumi Kusunoki)

1. A Comparative Study on Utilization of Semantic Information in Fuzzy Co-clustering
[ID 15](#) (Yusuke Takahata, Katsuhiko Honda, and Seiki Ubukata)
2. On Some Fuzzy Clustering Algorithms with Cluster-wise Covariance
[ID 10](#) (Toshiki Ishii and Yuchi Kanzawa)
3. On Fuzzy Clustering Algorithms for Categorical Data Based on k-Partitions **(Short Presentation)**
[ID 9](#) (Yunkai Yan and Yuchi Kanzawa)

15:50 - 16:05 Break

16:05 - 17:45 **General Session Room A: Machine Learning II**

(Chair: Prof. Katsuhiro Honda)

1. Noise Fuzzy Clustering-based Robust Non-negative Matrix Factorization with I-divergence Criterion
[ID 14](#) (Akira Okabe, Katsuhiro Honda, and Seiki Ubukata)
2. Topic Modeling of Political Dynamics with Shifted Cosine Similarity
[ID 23](#) (Yifan Luo, Tao Wan, and Zengchang Qin)
3. Transductive Learning Based on Low-Rank Representation with Convex Constraints
[ID 38](#) (Yoshifumi Kusunoki, Katsuhiko Kojima, and Keiji Tatsumi)
4. A Robustification Improvement of ANFIS Classifier **(Short Presentation)**
[ID 40](#) (Koki Kitamori, Katsuhiro Honda, and Seiki Ubukata)

General Session Room B: Economic Applications I

(Chair: Dr. Woraphon Yamaka)

1. Hedging Agriculture Commodities Futures with Histogram data Based on Conditional Copula-GJR-GARCH
[ID 3](#) (Roengchai Tansuchat and Pichayakone Rakpho)
2. Predicting Energy Price Volatility using Hybrid Artificial Neural Networks with GARCH-type Models
[ID 12](#) (Pichayakone Rakpho, Woraphon Yamaka, and Rungrapee Phadkantha)
3. Estimating Wind Speed by using Confidence Intervals for the Median in a Three-Parameter Lognormal Model
[ID 13](#) (Patcharee Maneerat, Sa-Aat Niwitpong, and Pisit Nakjai)
4. A Manual Assembly Process Virtual Training System with Automatically Generated Augmented Feedback **(Short Presentation)**
[ID 43](#) (Raveekiat Singhaphandu, Van-Nam Huynh, and Warut Pannakkong)

17:45 - 18:00 Break

18:00 - 19:00 **Keynote 1 (Room A): Decision Making and Optimization in Context of Inconsistently Interacting Goals and its Relation to Machine Learning**

Dr. Rudolf Felix (Chair: Prof. Van-Nam Huynh)

Saturday 19 March 2022

13:00 - 14:00 **Keynote 2 (Room A): Partition of Time Series Using Hierarchical Clustering**
Prof. Motohide Umano (Chair: Prof. Katsuhiko Honda)

14:00 - 14:15 Break

14:15 - 15:55 **General Session Room A: Economic Applications II**
(Chair: Prof. Roengchai Tansuchat)

1. Trust Uncertainty Modeling in Agri-food Logistic Decision Making
[ID 24](#) (Rindra Yusianto, Suprihatin Suprihatin, Hartrisari Hardjomidjojo, and Marimin Marimin)
2. Investigating the Predictive Power of Google Trend and Real Price Indexes in Forecasting the Inflation Volatility
[ID 34](#) (Kittawit Autchariyapanitkul, Terdthiti Chitkasame, Namchok Chimprang, and Chaiwat Klinlampu)
3. Price Volatility Dependence Structure Change among Agricultural Commodity Futures due to Extreme Event: an Analysis with the Vine Copula
[ID 35](#) (Konnika Palason, Tanapol Rattanasamakarn, and Roengchai Tansuchat)
4. Daily Electricity Peak Demand Forecasting using Hybrid Model based on Similar Day Selection Technique (**Short Presentation**)
[ID 44](#) (Lalitpat Aswanuwath, Van-Nam Huynh, and Warut Pannakkong)

General Session Room B: Optimization and Statistical Methods I
(Chair: Prof. Masahiro Inuiguchi)

1. Coyote Optimization Algorithm with Linear Convergence for Global Numerical Optimization
[ID 16](#) (Hsin-Jui Lin and Sheng-Ta Hsieh)
2. Additional Out-group Search for JADE
[ID 22](#) (Yuichi Miyahira and Akira Notsu)
3. Confidence Intervals for Mean of Delta Two-parameter Exponential Distribution
[ID 18](#) (Wansiri Khooriphan, Sa-Aat Niwitpong, and Suparat Niwitpong)
4. An Analysis to Treat the Degeneracy of a Basic Feasible Solution in Interval Linear Programming
[ID 28](#) (Zhenzhong Gao and Masahiro Inuiguchi)

15:55 - 16:10 Break

16:10 - 17:50 **General Session Room A: Uncertainty Management and Decision Making II**
(Chair: Prof. Tomoe Entani)

1. Measuring Quality of Belief Function Approximations
[ID 20](#) (Radim Jiroušek and Václav Kratochvíl)
2. Preference-based Assessment of Organizational Risk in Complex Environments
[ID 21](#) (Silvia Carpitella and Joaquín Izquierdo)
3. Decision Analysis with the Set of Normalized Triangular Fuzzy Weight Vectors in Fuzzy AHP
[ID 36](#) (Shigeaki Innan and Masahiro Inuiguchi)
4. Three-point Accuracy Comparison of Various Interval Weight Estimation Methods under a Given Pairwise Comparison Matrix (**Short Presentation**)
[ID 46](#) (Akiko Hayashi, Shigeaki Innan, and Masahiro Inuiguchi)

General Session Room B: Optimization and Statistical Methods II

(Chair: Prof. Katsushige Fujimoto)

1. Accounting for Gaussian Process Imprecision in Bayesian Optimization
[ID 17](#) (Julian Rodemann and Thomas Augustin)
2. Job-satisfaction Enhancement in Nurse Scheduling: A Case of Hospital Emergency Department in Thailand
[ID 30](#) (Pavinee Rerkjirattikal, Raveekiat Singhaphandu, Van-Nam Huynh, and Sun Olapiriyakul)
3. Analysis of Medical Data Using Interval Estimators for Common Mean of Gaussian Distributions with Unknown Coefficients of Variation
[ID 41](#) (Warisa Thangjai, Sa-Aat Niwitpong and Suparat Niwitpong)
4. On the Effects of Data Protection on Multi-database Data-driven Models
[ID 33](#) (Lili Jiang and Vicenç Torra)

17:50 - 18:05 Break

18:05 - 19:05 **Keynote 3 (Room A): The Robust Ordinal Regression: Basic Ideas, Principal Models, Recent Developments**

Prof. Salvatore Greco (Chair: Prof. Masahiro Inuiguchi)

19:05 - 19:20 Closing