

Junzo Watada, Gloria Phillips-Wren, Lakhmi C. Jain, and Robert J. Howlett (Eds.)

Intelligent Decision Technologies

Smart Innovation, Systems and Technologies 10

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Preface

Intelligent Decision Technologies (IDT) seeks an interchange of research on intelligent systems and intelligent technologies which enhance or improve decision making in industry, government and academia. The focus is interdisciplinary in nature, and includes research on all aspects of intelligent decision technologies, from fundamental development to the applied system.

The field of intelligent systems is expanding rapidly due, in part, to advances in Artificial Intelligence and environments that can deliver the technology when and where it is needed. One of the most successful areas for advances has been intelligent decision making and related applications. Intelligent decision systems are based upon research in intelligent agents, fuzzy logic, multi-agent systems, artificial neural networks, and genetic algorithms, among others. Applications of intelligence-assisted decision making can be found in management, international business, finance, accounting, marketing, healthcare, medical and diagnostic systems, military decisions, production and operation, networks, traffic management, crisis response, human-machine interfaces, financial and stock market monitoring and prediction, and robotics. Some areas such as virtual decision environments, social networking, 3D human-machine interfaces, cognitive interfaces, collaborative systems, intelligent web mining, e-commerce, e-learning, e-business, bioinformatics, evolvable systems, virtual humans, and designer drugs are just beginning to emerge.

In this volume we publish the research of scholars from the Third KES International Symposium on Intelligent Decision Technologies (KES IDT'11), hosted and organized by the University of Piraeus, Greece, in conjunction with KES International. The book contains chapters based on papers selected from a large number of submissions for consideration for the symposium from the international community. Each paper was double-blind, peer-reviewed by at least two independent referees. The best papers were accepted based on recommendations of the reviewers and after required revisions had been undertaken by the authors. The final publication represents the current leading thought in intelligent decision technologies.

We wish to express our sincere gratitude to the plenary speakers, invited session chairs, delegates from all over the world, the authors of various chapters and reviewers for their outstanding contributions. We express our sincere thanks to the University of Piraeus for their sponsorship and support of the symposium. We thank the International Programme Committee for their support and assistance. We would like to thank Peter Cushion of KES International for his help with

organizational issues. We thank the editorial team of Springer-Verlag for their support in production of this volume. We sincerely thank the Local Organizing Committee, Professors Maria Virvou and George Tsihrintzis, and students at the University of Piraeus for their invaluable assistance.

We hope and believe that this volume will contribute to ideas for novel research and advancement in intelligent decision technologies for researchers, practitioners, professors and research students who are interested in knowledge-based and intelligent engineering systems.

Piraeus, Greece
20–22 July 2011

Junzo Watada
Gloria Phillips-Wren
Lakhmi C. Jain
Robert J. Howlett

Contents

Part I: Modeling and Method of Decision Making

1	A Combinational Disruption Recovery Model for Vehicle Routing Problem with Time Windows	3
	<i>Xuping Wang, Junhu Ruan, Hongyan Shang, Chao Ma</i>	
2	A Decision Method for Disruption Management Problems in Intermodal Freight Transport	13
	<i>Minfang Huang, Xiangpei Hu, Lihua Zhang</i>	
3	A Dominance-Based Rough Set Approach of Mathematical Programming for Inducing National Competitiveness	23
	<i>Yu-Chien Ko, Gwo-Hshiung Tzeng</i>	
4	A GPU-Based Parallel Algorithm for Large Scale Linear Programming Problem	37
	<i>Jianming Li, Renping Lv, Xiangpei Hu, Zhongqiang Jiang</i>	
5	A Hybrid MCDM Model on Technology Assessment to Business Strategy	47
	<i>Mei-Chen Lo, Min-Hsien Yang, Chien-Tzu Tsai, Aleksey V. Pugovkin, Gwo-Hshiung Tzeng</i>	
6	A Quantitative Model for Budget Allocation for Investment in Safety Measures	57
	<i>Yuji Sato</i>	
7	Adapted Queueing Algorithms for Process Chains	65
	<i>Ágnes Bogárdi-Mészöly, András Rövid, Péter Földesi</i>	
8	An Improved EMD Online Learning-Based Model for Gold Market Forecasting	75
	<i>Shifei Zhou, Kin Keung Lai</i>	

9	Applying Kansei Engineering to Decision Making in Fragrance Form Design	85
	<i>Chun-Chun Wei, Min-Yuan Ma, Yang-Cheng Lin</i>	
10	Biomass Estimation for an Anaerobic Bioprocess Using Interval Observer	95
	<i>Elena M. Bunciu</i>	
11	Building Multi-Attribute Decision Model Based on Kansei Information in Environment with Hybrid Uncertainty	103
	<i>Junzo Watada, Nureize Arbaiy</i>	
12	Building on the Synergy of Machine and Human Reasoning to Tackle Data-Intensive Collaboration and Decision Making	113
	<i>Nikos Karacapilidis, Stefan Rüping, Manolis Tzagarakis, Axel Poigné, Spyros Christodoulou</i>	
13	Derivations of Information Technology Strategies for Enabling the Cloud Based Banking Service by a Hybrid MADM Framework	123
	<i>Chi-Yo Huang, Wei-Chang Tzeng, Gwo-Hshiung Tzeng, Ming-Cheng Yuan</i>	
14	Difficulty Estimator for Converting Natural Language into First Order Logic	135
	<i>Isidoros Perikos, Foteini Grivokostopoulou, Ioannis Hatzilygeroudis, Konstantinos Kovas</i>	
15	Emergency Distribution Scheduling with Maximizing Marginal Loss-Saving Function	145
	<i>Yiping Jiang, Lindu Zhao</i>	
16	Fuzzy Control of a Wastewater Treatment Process	155
	<i>Alina Chiroșcă, George Dumitrașcu, Marian Barbu, Sergiu Caraman</i>	
17	Interpretation of Loss Aversion in Kano's Quality Model	165
	<i>Péter Földesi, János Botzheim</i>	
18	MCDM Applications on Effective Project Management for New Wafer Fab Construction	175
	<i>Mei-Chen Lo, Gwo-Hshiung Tzeng</i>	
19	Machine Failure Diagnosis Model Applied with a Fuzzy Inference Approach	185
	<i>Lily Lin, Huey-Ming Lee</i>	
20	Neural Network Model Predictive Control of a Wastewater Treatment Bioprocess	191
	<i>Dorin Șendrescu, Emil Petre, Dan Popescu, Monica Roman</i>	

21	Neural Networks Based Adaptive Control of a Fermentation Bioprocess for Lactic Acid Production	201
	<i>Emil Petre, Dan Selișteanu, Dorin Șendrescu</i>	
22	New Evaluation Method for Imperfect Alternative Matrix	213
	<i>Toshimasa Ozaki, Kanna Miwa, Akihiro Itoh, Mei-Chen Lo, Eizo Kinoshita, Gwo-Hshiung Tzeng</i>	
23	Piecewise Surface Regression Modeling in Intelligent Decision Guidance System	223
	<i>Juan Luo, Alexander Brodsky</i>	
24	Premises of an Agent-Based Model Integrating Emotional Response to Risk in Decision-Making	237
	<i>Ioana Florina Popovici</i>	
25	Proposal of Super Pairwise Comparison Matrix	247
	<i>Takao Ohya, Eizo Kinoshita</i>	
26	Reduction of Dimension of the Upper Level Problem in a Bilevel Programming Model Part 1	255
	<i>Vyacheslav V. Kalashnikov, Stephan Dempe, Gerardo A. Pérez-Valdés, Nataliya I. Kalashnykova</i>	
27	Reduction of Dimension of the Upper Level Problem in a Bilevel Programming Model Part 2	265
	<i>Vyacheslav V. Kalashnikov, Stephan Dempe, Gerardo A. Pérez-Valdés, Nataliya I. Kalashnykova</i>	
28	Representation of Loss Aversion and Impatience Concerning Time Utility in Supply Chains	273
	<i>Péter Földesi, János Botzheim, Edit Süle</i>	
29	Robotics Application within Bioengineering: Neuroprosthesis Test Bench and Model Based Neural Control for a Robotic Leg	283
	<i>Dorin Popescu, Dan Selișteanu, Marian S. Poboroniuc, Danut C. Irimia</i>	
30	The Improvement Strategy of Online Shopping Service Based on SIA-NRM Approach	295
	<i>Chia-Li Lin</i>	
31	The Optimization Decisions of the Decentralized Supply Chain under the Additive Demand	307
	<i>Peng Ma, Haiyan Wang</i>	
32	The Relationship between Dominant AHP/CCM and ANP	319
	<i>Eizo Kinoshita, Shin Sugiura</i>	

- 33 The Role of Kansei/Affective Engineering and Its Expected in Aging Society** 329
Hisao Shiizuka, Ayako Hashizume

Part II: Decision Making in Finance and Management

- 34 A Comprehensive Macroeconomic Model for Global Investment** . . . 343
Ming-Yuan Hsieh, You-Shyang Chen, Chien-Jung Lai, Ya-Ling Wu
- 35 A DEMATEL Based Network Process for Deriving Factors Influencing the Acceptance of Tablet Personal Computers** 355
Chi-Yo Huang, Yi-Fan Lin, Gwo-Hshiung Tzeng
- 36 A Map Information Sharing System among Refugees in Disaster Areas, on the Basis of Ad-Hoc Networks** 367
Koichi Asakura, Takuya Chiba, Toyohide Watanabe
- 37 A Study on a Multi-period Inventory Model with Quantity Discounts Based on the Previous Order** 377
Sungmook Lim
- 38 A Study on the ECOAccountancy through Analytical Network Process Measurement** 389
Chaang-Yung Kung, Chien-Jung Lai, Wen-Ming Wu, You-Shyang Chen, Yu-Kuang Cheng
- 39 Attribute Coding for the Rough Set Theory Based Rule Simplications by Using the Particle Swarm Optimization Algorithm** 399
Jieh-Ren Chang, Yow-Hao Jheng, Chi-Hsiang Lo, Betty Chang
- 40 Building Agents by Assembly Software Components under Organizational Constraints of Multi-Agent System** 409
Siam Abderrahim, Maamri Ramdane
- 41 Determining an Efficient Parts Layout for Assembly Cell Production by Using GA and Virtual Factory System** 419
Hidehiko Yamamoto, Takayoshi Yamada
- 42 Development of a Multi-issue Negotiation System for E-Commerce** 429
Bala M. Balachandran, R. Gobbin, Dharmendra Sharma
- 43 Effect of Background Music Tempo and Playing Method on Shopping Website Browsing** 439
Chien-Jung Lai, Ya-Ling Wu, Ming-Yuan Hsieh, Chang-Yung Kung, Yu-Hua Lin

44	Forecasting Quarterly Profit Growth Rate Using an Integrated Classifier	449
	<i>You-Shyang Chen, Ming-Yuan Hsieh, Ya-Ling Wu, Wen-Ming Wu</i>	
45	Fuzzy Preference Based Organizational Performance Measurement	459
	<i>Roberta O. Parreiras, Petr Ya Ekel</i>	
46	Generating Reference Business Process Model Using Heuristic Approach Based on Activity Proximity	469
	<i>Bernardo N. Yahya, Hyerim Bae</i>	
47	How to Curtail the Cost in the Supply Chain?	479
	<i>Wen-Ming Wu, Chaang-Yung Kung, You-Shyang Chen, Chien-Jung Lai</i>	
48	Intelligent Decision for Dynamic Fuzzy Control Security System in Wireless Networks	489
	<i>Xu Huang, Pritam Gajkumar Shah, Dharmendra Sharma</i>	
49	Investigating the Continuance Commitment of Volitional Systems from the Perspective of Psychological Attachment	501
	<i>Huan-Ming Chuang, Chyuan-Yuh Lin, Chien-Ku Lin</i>	
50	Market Structure as a Network with Positively and Negatively Weighted Links	511
	<i>Takeo Yoshikawa, Takashi Iino, Hiroshi Iyetomi</i>	
51	Method of Benchmarking Route Choice Based on the Input Similarity Using DEA	519
	<i>Jaehun Park, Hyerim Bae, Sungmook Lim</i>	
52	Modelling Egocentric Communication and Learning for Human-Intelligent Agents Interaction	529
	<i>R. Gobbin, Masoud Mohammadian, Bala M. Balachandran</i>	
53	Multiscale Community Analysis of a Production Network of Firms in Japan	537
	<i>Takashi Iino, Hiroshi Iyetomi</i>	
54	Notation-Support Method in Music Composition Based on Interval-Pitch Conversion	547
	<i>Masanori Kanamaru, Koichi Hanaue, Toyohide Watanabe</i>	
55	Numerical Study of Random Correlation Matrices: Finite-Size Effects	557
	<i>Yuta Arai, Kouichi Okunishi, Hiroshi Iyetomi</i>	

56	Predicting of the Short Term Wind Speed by Using a Real Valued Genetic Algorithm Based Least Squared Support Vector Machine	567
	<i>Chi-Yo Huang, Bo-Yu Chiang, Shih-Yu Chang, Gwo-Hshiuung Tzeng, Chun-Chieh Tseng</i>	
57	Selecting English Multiple-Choice Cloze Questions Based on Difficulty-Based Features	577
	<i>Tomoko Kojiri, Yuki Watanabe, Toyohide Watanabe</i>	
58	Testing Randomness by Means of RMT Formula	589
	<i>Xin Yang, Ryota Itoi, Mieko Tanaka-Yamawaki</i>	
59	The Effect of Web-Based Instruction on English Writing for College Students	597
	<i>Ya-Ling Wu, Wen-Ming Wu, Chaang-Yung Kung, Ming-Yuan Hsieh</i>	
60	The Moderating Role of Elaboration Likelihood on Information System Continuance	605
	<i>Huan-Ming Chuang, Chien-Ku Lin, Chyuan-Yuh Lin</i>	
61	The Type of Preferences in Ranking Lists	617
	<i>Piech Henryk, Grzegorz Gawinowski</i>	
62	Transaction Management for Inter-organizational Business Process	629
	<i>Joonsoo Bae, Nita Solehati, Young Ki Kang</i>	
63	Trend-Extraction of Stock Prices in the American Market by Means of RMT-PCA	637
	<i>Mieko Tanaka-Yamawaki, Takemasa Kido, Ryota Itoi</i>	
64	Using the Rough Set Theory to Investigate the Building Facilities for the Performing Arts from the Performer's Perspectives	647
	<i>Betty Chang, Hung-Mei Pei, Jieh-Ren Chang</i>	

Part III: Data Analysis and Data Navigation

65	A Novel Collaborative Filtering Model for Personalized Recommendation	661
	<i>Wang Qian</i>	
66	A RSSI-Based Localization Algorithm in Smart Space	671
	<i>Liu Jian-hui, Han Chang-jun</i>	
67	An Improved Bee Algorithm-Genetic Algorithm	683
	<i>Huang Ming, Ji Baohui, Liang Xu</i>	

68	Application of Bayesian Network in Failure Diagnosis of Hydro-electrical Simulation System	691
	<i>Zhou Yan, Li Peng</i>	
69	Application of Evidence Fusion Theory in Water Turbine Model ...	699
	<i>Li Hai-cheng, Qi Zhi</i>	
70	Calculating Query Likelihoods Based on Web Data Analysis	707
	<i>Koya Tamura, Kenji Hatano, Hiroshi Yadohisa</i>	
71	Calculating Similarities between Tree Data Based on Structural Analysis	719
	<i>Kento Ikeda, Takashi Kobayashi, Kenji Hatano, Daiji Fukagawa</i>	
72	Continuous Auditing for Health Care Decision Support Systems ...	731
	<i>Robert D. Kent, Atif Hasan Zahid, Anne W. Snowdon</i>	
73	Design and Implementation of a Primary Health Care Services Navigational System Architecture	743
	<i>Robert D. Kent, Paul D. Preney, Anne W. Snowdon, Farhan Sajjad, Gokul Bhandari, Jason McCarrell, Tom McDonald, Ziad Kobti</i>	
74	Emotion Enabled Model for Hospital Medication Administration	753
	<i>Dreama Jain, Ziad Kobti, Anne W. Snowdon</i>	
75	Health Information Technology in Canada's Health Care System: Innovation and Adoption	763
	<i>Anne W. Snowdon, Jeremy Shell, Kellie Leitch, O. Ont, Jennifer J. Park</i>	
76	Hierarchical Clustering for Interval-Valued Functional Data	769
	<i>Nobuo Shimizu</i>	
77	Multidimensional Scaling with Hyperbox Model for Percentile Dissimilarities	779
	<i>Yoshikazu Terada, Hiroshi Yadohisa</i>	
78	Predictive Data Mining Driven Architecture to Guide Car Seat Model Parameter Initialization	789
	<i>Sabbir Ahmed, Ziad Kobti, Robert D. Kent</i>	
79	Symbolic Hierarchical Clustering for Visual Analogue Scale Data	799
	<i>Kotoe Katayama, Rui Yamaguchi, Seiya Imoto, Hideaki Tokunaga, Yoshihiro Imazu, Keiko Matsuura, Kenji Watanabe, Satoru Miyano</i>	

Part IV: Miscellanea

80	Acquisition of User's Learning Styles Using Log Mining Analysis through Web Usage Mining Process	809
	<i>Sucheta V. Kolekar, Sriram G. Sanjeevi, D.S. Bormane</i>	
81	An Agent Based Middleware for Privacy Aware Recommender Systems in IPTV Networks	821
	<i>Ahmed M. Elmisery, Dmitri Botvich</i>	
82	An Intelligent Decision Support Model for Product Design	833
	<i>Yang-Cheng Lin, Chun-Chun Wei</i>	
83	Compromise in Scheduling Objects Procedures Basing on Ranking Lists	843
	<i>Piech Henryk, Grzegorz Gawinowski</i>	
84	Decision on the Best Retrofit Scenario to Maximize Energy Efficiency in a Building	853
	<i>Ana Campos, Rui Neves-Silva</i>	
85	Developing Intelligent Agents with Distributed Computing Middleware	863
	<i>Christos Sioutis, Derek Dominish</i>	
86	Diagnosis Support on Cardio-Vascular Signal Monitoring by Using Cluster Computing	873
	<i>Ahmed M. Elmisery, Martín Serrano, Dmitri Botvich</i>	
87	Multiple-Instance Learning via Decision-Based Neural Networks	885
	<i>Yeong-Yuh Xu, Chi-Huang Shih</i>	
88	Software Testing – Factor Contribution Analysis in a Decision Support Framework	897
	<i>Deane Larkman, Ric Jentzsch, Masoud Mohammadian</i>	
89	Sustainability of the Built Environment – Development of an Intelligent Decision System to Support Management of Energy-Related Obsolescence	907
	<i>T.E. Butt, K.G. Jones</i>	
	Author Index	921
	Index	925