

Contents – Part I

Invited Talks

Fuzzy Semantic Web Languages and Beyond	3
<i>Umberto Straccia</i>	
Rational Enterprise Architecture	9
<i>Leendert van der Torre and Marc van Zee</i>	

Constraints, Planning and Optimization

Cluster-Specific Heuristics for Constraint Solving	21
<i>Seda Polat Erdeniz, Alexander Felfernig, Muesluem Atas, Thi Ngoc Trang Tran, Michael Jeran, and Martin Stettinger</i>	
Car Pooling Based on a Meta-heuristic Approach	31
<i>Fu-Shiung Hsieh, Fu-Min Zhan, and Yi-Hong Guo</i>	
Reactive Motion Planning with Qualitative Constraints	41
<i>Domen Šoberl and Ivan Bratko</i>	
A New System for the Dynamic Shortest Route Problem	51
<i>Eisa Alanazi, Malek Mouhoub, and Mahmoud Halfawy</i>	
M-NSGA-II: A Memetic Algorithm for Vehicle Routing Problem with Route Balancing	61
<i>Yuyan Sun, Yuxuan Liang, Zizhen Zhang, and Jiahai Wang</i>	
A Matrix-Based Implementation of DE Algorithm: The Compensation and Deficiency	72
<i>Jeng-Shyang Pan, Zhenyu Meng, Huarong Xu, and Xiaoqing Li</i>	
A Bayesian Model of Game Decomposition	82
<i>Hanqing Zhao, Zengchang Qin, Weijia Liu, and Tao Wan</i>	
Two-Timescale Learning Automata for Solving Stochastic Nonlinear Resource Allocation Problems	92
<i>Anis Yazidi, Hugo Lewi Hammer, and Tore Møller Jonassen</i>	
A Hybrid of Tabu Search and Simulated Annealing Algorithms for Preemptive Project Scheduling Problem	102
<i>Behrouz Afshar-Nadjafi, Mehdi Yazdani, and Mahyar Majlesi</i>	

Elitist Ant System for the Distributed Job Shop Scheduling Problem	112
<i>Imen Chaouch, Olfa Belkahla Driss, and Khaled Ghedira</i>	
Fuzzy Reinforcement Learning for Routing in Multi-Hop Cognitive Radio Networks	118
<i>Jerzy Martyna</i>	
FJS Problem Under Machine Breakdowns	124
<i>Rim Zarrouk, Imed Bennour, Abderrazak Jemai, and Abdelghani Bekrar</i>	
A Dijkstra-Based Algorithm for Selecting the Shortest-Safe Evacuation Routes in Dynamic Environments (SSER)	131
<i>Angely Oyola, Dennis G. Romero, and Boris X. Vintimilla</i>	
Replication in Fault-Tolerant Distributed CSP.	136
<i>Fadoua Chakchouk, Julien Vion, Sylvain Piechowiak, René Mandiau, Makram Soui, and Khaled Ghedira</i>	
Optimal Route Prediction as a Smart Mobile Application of Gift Ideas	141
<i>Veronika Nemeckova, Jan Dvorak, Ali Selamat, and Ondrej Krejcar</i>	
Data Mining and Machine Learning	
Machine Learning Approach to Detect Falls on Elderly People Using Sound	149
<i>Armando Collado-Villaverde, María D. R-Moreno, David F. Barrero, and Daniel Rodriguez</i>	
A Novel k -NN Approach for Data with Uncertain Attribute Values	160
<i>Asma Trabelsi, Zied Elouedi, and Eric Lefevre</i>	
On Combining Imputation Methods for Handling Missing Data	171
<i>Nassima Ben Hariz, Hela Khoufi, and Ezzeddine Zagrouba</i>	
Supervised Feature Space Reduction for Multi-Label Nearest Neighbors	182
<i>Wissam Siblini, Reda Alami, Frank Meyer, and Pascale Kuntz</i>	
Stock Volatility Prediction Using Recurrent Neural Networks with Sentiment Analysis.	192
<i>Yifan Liu, Zengchang Qin, Pengyu Li, and Tao Wan</i>	
Incremental Quantiles Estimators for Tracking Multiple Quantiles	202
<i>Hugo Lewi Hammer and Anis Yazidi</i>	
Forecasting Passenger Flows Using Data Analytics	211
<i>Nang Laik Ma</i>	

Co-location Rules Discovery Process Focused on Reference Spatial Features Using Decision Tree Learning	221
<i>Giovanni Daián Rottoli, Hernán Merlino, and Ramón García-Martínez</i>	
Virtual Career Advisor System with an Artificial Neural Network.	227
<i>Tracey John and Dwaine Clarke</i>	
Implicit Knowledge Extraction and Structuration from Electrical Diagrams	235
<i>Ikram Chraïbi Kaadoud, Nicolas Rougier, and Frederic Alexandre</i>	
An Energy-Aware Learning Agent for Power Management in Mobile Devices.	242
<i>Ismat Chaib Draa, Emmanuelle Grislin-Le Strugeon, and Smail Niar</i>	
Sensors, Signal Processing and Data Fusion	
An Empirical Study on Verifier Order Selection in Serial Fusion Based Multi-biometric Verification System.	249
<i>Md Shafaeat Hossain and Khandaker Abir Rahman</i>	
Characterization of Cardiovascular Diseases Using Wavelet Packet Decomposition and Nonlinear Measures of Electrocardiogram Signal.	259
<i>Hamido Fujita, Vidya K. Sudarshan, Muhammad Adam, Shu Lih Oh, Jen Hong Tan, Yuki Hagiwara, Kuang Chua Chua, Kok Poo Chua, and U. Rajendra Acharya</i>	
Biometric Keystroke Signal Preprocessing Part I: Signalization, Digitization and Alteration.	267
<i>Orcan Alpar and Ondrej Krejcar</i>	
Robust Sensor Data Fusion Through Adaptive Threshold Learning	277
<i>Bing Zhou, Hyuk Cho, and Adam Mansfield</i>	
An Application of Fuzzy Signal-to-Noise Ratio to the Assessment of Manufacturing Processes	283
<i>Shiang-Tai Liu</i>	
Biometric Keystroke Signal Preprocessing Part II: Manipulation	289
<i>Orcan Alpar and Ondrej Krejcar</i>	
Computational Intelligence Techniques for Modelling the Critical Flashover Voltage of Insulators: From Accuracy to Comprehensibility	295
<i>Evangelos Karampotsis, Konstantinos Boulas, Alexandros Tzanetos, Vasilios P. Androvitsaneas, Ioannis F. Gonos, Georgios Dounias, and Ioannis A. Stathopoulos</i>	

Recommender Systems

Replication and Reproduction in Recommender Systems Research - Evidence from a Case-Study with the recsys Library	305
<i>Ludovik Çoba and Markus Zanker</i>	
A New User-Based Collaborative Filtering Under the Belief Function Theory	315
<i>Raoua Abdelkhalek, Imen Boukhris, and Zied Elouedi</i>	
Aggregating Top-K Lists in Group Recommendation Using Borda Rule	325
<i>Sabrina Ben Abd rabbah, Manel Ayadi, Raouia Ayachi, and Nahla Ben Amor</i>	
An Analysis of Group Recommendation Heuristics for High- and Low-Involvement Items	335
<i>Alexander Felfernig, Muesluem Atas, Thi Ngoc Trang Tran, Martin Stettinger, Seda Polat Erdeniz, and Gerhard Leitner</i>	
SemCoTrip: A Variety-Seeking Model for Recommending Travel Activities in a Composite Trip	345
<i>Montassar Ben Messaoud, Ilyes Jenhani, Eya Garci, and Toon De Pessemier</i>	

Decision Support Systems

A New Dynamic Model for Anticipatory Adaptive Control of Airline Seat Reservation via Order Statistics of Cumulative Customer Demand.	359
<i>Nicholas Nechval, Gundars Berzins, and Vadims Danovics</i>	
A Multi-Criteria Decision Support Framework for Interactive Adaptive Systems Evaluation	371
<i>Amira Dhoub, Abdelwaheb Trabelsi, Christophe Kolski, and Mahmoud Neji</i>	
Application of Multi-Criteria Decision Making Method for Developing a Control Plan	383
<i>Fadwa Oukhay, Hajer Ben Mahmoud, and Taieb Ben Romdhane</i>	
Efficient Matching in Heterogeneous Rule Engines	394
<i>Kennedy Kambona, Thierry Renaux, and Wolfgang De Meuter</i>	
Towards Extending Business Process Modeling Formalisms with Information and Knowledge Dimensions.	407
<i>Mariam Ben Hassen, Mohamed Turki, and Faïez Gargouri</i>	

Adaptive Planning in-Service Inspections of Fatigued Structures in Damage Tolerance Situations via Observations of Crack Growth Process	426
<i>Nicholas Nechval, Gundars Berzins, and Vadims Danovics</i>	
Introducing Causality in Business Rule-Based Decisions	433
<i>Karim El Mernissi, Pierre Feillet, Nicolas Maudet, and Wassila Ouerdane</i>	
Model-Based Diagnosis in Practice: Interaction Design of an Integrated Diagnosis Application for Industrial Wind Turbines.	440
<i>Roxane Koitz, Johannes Lüftenegger, and Franz Wotawa</i>	
A New Model to Implement a SWOT Fuzzy ANP	446
<i>Mounira Souli, Ahmed Badreddine, and Taieb Ben Romdhane</i>	

Knowledge Representation and Reasoning

Argumentative Approaches to Reasoning with Consistent Subsets of Premises.	455
<i>Ofer Arieli, AnneMarie Borg, and Christian Straßer</i>	
Volunteered Geographic Information Management Supported by Fuzzy Ontologies and Level-Based Approximate Reasoning	466
<i>Gloria Bordogna and Simone Sterlacchini</i>	
Regular and Sufficient Bounds of Finite Domain Constraints for Skeptical C-Inference	477
<i>Christoph Beierle and Steven Kutsch</i>	
On Transformations and Normal Forms of Conditional Knowledge Bases . . .	488
<i>Christoph Beierle, Christian Eichhorn, and Gabriele Kern-Isberner</i>	
ADnOTO: A Self-adaptive System for Automatic Ontology-Based Annotation of Unstructured Documents	495
<i>Laura Pandolfo and Luca Pulina</i>	
Ontologies in System Engineering: A Field Report	502
<i>Marco Menapace and Armando Tacchella</i>	
An Argumentative Agent-Based Model of Scientific Inquiry.	507
<i>AnneMarie Borg, Daniel Frey, Dunja Šešelja, and Christian Straßer</i>	

Navigation, Control and Autonomous Agents

Development of a Novel Driver Model Offering Human like Longitudinal Vehicle Control in Order to Simulate Emission in Real Driving Conditions.	513
<i>Aymeric Rateau, Wim van der Borcht, Marcello Mastroleo, Alessandro Pietro Bardelli, Alessandro Bacchini, and Federico Sassi</i>	
Consistency Check in a Multiple Viewpoint System for Reasoning About Occlusion.	523
<i>Ana Paula Martin, Paulo E. Santos, and Marjan Safi-Samghabadi</i>	
An Advanced Teleassistance System to Improve Life Quality in the Elderly	533
<i>Fernando Roperro, Daniel Vaquerizo, Pablo Muñoz, and María D. R-Moreno</i>	
Learning the Elasticity of a Series-Elastic Actuator for Accurate Torque Control.	543
<i>Bingbin Yu, José de Gea Fernández, Yohannes Kassahun, and Vinzenz Bargsten</i>	
The Effect of Rotation in the Navigation of Multi-level Buildings: A Pilot Study	553
<i>Giulia Mastrodonato, Domenico Camarda, Caterina De Lucia, and Dino Borri</i>	
NAO Robot, Transmitter of Social Cues: What Impacts? The Example with “Endowment effect”.	559
<i>Olivier Masson, Jean Baratgin, and Frank Jamet</i>	
Arduino as a Control Unit for the System of Laser Diodes.	569
<i>Jiri Bradle, Jakub Mesicek, Ondrej Krejcar, Ali Selamat, and Kamil Kuca</i>	

Sentiment Analysis and Social Media

Timeline Summarization for Event-Related Discussions on a Chinese Social Media Platform	579
<i>Han Wang and Jia-Ling Koh</i>	
Evidential Link Prediction in Uncertain Social Networks Based on Node Attributes	595
<i>Sabrina Mallek, Imen Boukhris, Zied Elouedi, and Eric Lefevre</i>	
Arabic Tweets Sentimental Analysis Using Machine Learning	602
<i>Khaled Mohammad Alomari, Hatem M. ElSherif, and Khaled Shaalan</i>	

Getting Frustrated: Modelling Emotional Contagion in Stranded Passengers.	611
<i>C. Natalie van der Wal, Maik Couwenberg, and Tibor Bosse</i>	
An Agent-Based Evacuation Model with Social Contagion Mechanisms and Cultural Factors	620
<i>C. Natalie van der Wal, Daniel Formolo, and Tibor Bosse</i>	
A Consensus Approach to Sentiment Analysis	628
<i>Orestes Appel, Francisco Chiclana, Jenny Carter, and Hamido Fujita</i>	
Way of Coordination of Visual Modeling and Mental Imagery in Conceptual Solution of Project Task	635
<i>P. Sosnin and M. Galochkin</i>	
Author Index	639

Contents – Part II

Games, Computer Vision and Animation

Annotating Movement Phrases in Vietnamese Folk Dance Videos.	3
<i>Chau Ma-Thi, Karim Tabia, Sylvain Lagrue, Ha Le-Thanh, Duy Bui-The, and Thuy Nguyen-Thanh</i>	
Mining the Lattice of Binary Classifiers for Identifying Duplicate Labels in Behavioral Data	12
<i>Quentin Labernia, Victor Codocedo, Céline Robardet, and Mehdi Kaytoue</i>	
Implementing a Tool for Translating Dance Notation to Display in 3D Animation: A Case Study of Traditional Thai Dance	22
<i>Yoothapong Tongpaeng, Mongkhol Rattanakhum, Pradorn Sureephong, and Satichai Wicha</i>	
Dance Training Tool Using Kinect-Based Skeleton Tracking and Evaluating Dancer’s Performance	27
<i>Ob-orm Muangmoon, Pradorn Sureephong, and Karim Tabia</i>	
Using Program by Demonstration and Visual Scripting to Supporting Game Design	33
<i>Ismael Sagredo-Olivenza, Pedro Pablo Gómez-Martín, Marco Antonio Gómez-Martín, and Pedro A. González-Calero</i>	
Presenting Mathematical Expression Images on Web to Support Mathematics Understanding	40
<i>Kuniko Yamada, Hiroshi Ueda, Harumi Murakami, and Ikuo Oka</i>	
Chiang Mai Digital Craft: A Case Study of Craftsmanship’s Knowledge Representation Using Digital Content Technology.	47
<i>Suepphong Charnbumroong, Pradorn Sureephong, and Yoothapong Tongpaeng</i>	

Uncertainty Management

A Robust, Distributed Task Allocation Algorithm for Time-Critical, Multi Agent Systems Operating in Uncertain Environments	55
<i>Amanda Whitbrook, Qinggang Meng, and Paul W.H. Chung</i>	

An Efficient Probabilistic Merging Procedure Applied to Statistical Matching	65
<i>Marco Baiocchi and Andrea Capotorti</i>	
Interval-Based Possibilistic Logic in a Coherent Setting	75
<i>Giulianella Coletti, Davide Petturiti, and Barbara Vantaggi</i>	
Conjunction and Disjunction Among Conditional Events	85
<i>Angelo Gilio and Giuseppe Sanfilippo</i>	
A Gold Standards-Based Crowd Label Aggregation Within the Belief Function Theory.	97
<i>Lina Abassi and Imen Boukhris</i>	
Experimental Evaluation of the Understanding of Qualitative Probability and Probabilistic Reasoning in Young Children	107
<i>Jean Baratgin, Giulianella Coletti, Frank Jamet, and Davide Petturiti</i>	
A Set-Valued Approach to Multiple Source Evidence	113
<i>Didier Dubois and Henri Prade</i>	
Graphical Models: From Theory to Applications	
On the Use of WalkSAT Based Algorithms for MLN Inference in Some Realistic Applications	121
<i>Romain Rincé, Romain Kervarc, and Philippe Leray</i>	
Applying Object-Oriented Bayesian Networks for Smart Diagnosis and Health Monitoring at both Component and Factory Level	132
<i>Anders L. Madsen, Nicolaj Sønderberg-Jeppesen, Mohamed S. Sayed, Michael Peschl, and Niels Lohse</i>	
Graphical Representations of Multiple Agent Preferences	142
<i>Nahla Ben Amor, Didier Dubois, H��la Gouider, and Henri Prade</i>	
A Probabilistic Relational Model Approach for Fault Tree Modeling	154
<i>Thierno Kante and Philippe Leray</i>	
Incremental Method for Learning Parameters in Evidential Networks.	163
<i>Narjes Ben Hariz and Boutheina Ben Yaghlane</i>	
aGrUM: A Graphical Universal Model Framework	171
<i>Christophe Gonzales, Lionel Torti, and Pierre-Henri Wuillemin</i>	

Anomaly Detection

Improving Card Fraud Detection Through Suspicious Pattern Discovery	181
<i>Fabian Braun, Olivier Caelen, Evgueni N. Smirnov, Steven Kelk, and Bertrand Lebuchot</i>	
Contextual Air Leakage Detection in Train Braking Pipes	191
<i>Wan-Jui Lee</i>	
K-means Application for Anomaly Detection and Log Classification in HPC	201
<i>Mohamed Cherif Dani, Henri Doreau, and Samantha Alt</i>	
Information Quality in Social Networks: A Collaborative Method for Detecting Spam Tweets in Trending Topics.	211
<i>Mahdi Washha, Aziz Qaroush, Manel Mezghani, and Florence Sedes</i>	

Agronomy and Artificial Intelligence

Bayesian Model Averaging for Streamflow Prediction of Intermittent Rivers.	227
<i>Paul J. Darwen</i>	
A Mixed Integer Programming Reformulation of the Mixed Fruit-Vegetable Crop Allocation Problem	237
<i>Sara Maqrot, Simon de Givry, Gauthier Quesnel, and Marc Tchamitchian</i>	
Data Collection and Analysis of Usages from Connected Objects: Some Lessons.	251
<i>Sara Meftah, Antoine Cornuéjols, Juliette Dibie, and Mariette Sicard</i>	
Assessing Nitrogen Nutrition in Corn Crops with Airborne Multispectral Sensors	259
<i>Jaen Alberto Arroyo, Cecilia Gomez-Castaneda, Elias Ruiz, Enrique Munoz de Cote, Francisco Gavi, and Luis Enrique Sucar</i>	
Multidimensional Analysis Through Argumentation? Contributions from a Short Food Supply Chain Experience	268
<i>Rallou Thomopoulos and Dominique Paturel</i>	
Combined Argumentation and Simulation to Support Decision: Example to Assess the Attractiveness of a Change in Agriculture	275
<i>Rallou Thomopoulos, Bernard Moulin, and Laurent Bedoussac</i>	

Applications of Argumentation

Analysis of Medical Arguments from Patient Experiences Expressed on the Social Web.	285
<i>Kawsar Noor, Anthony Hunter, and Astrid Mayer</i>	
A Dynamic Logic Framework for Abstract Argumentation: Adding and Removing Arguments.	295
<i>Sylvie Doutre, Faustine Maffre, and Peter McBurney</i>	
Combining Answer Set Programming with Description Logics for Analogical Reasoning Under an Agent's Preferences	306
<i>Teeradaj Racharak, Satoshi Tojo, Nguyen Duy Hung, and Prachya Boonkwan</i>	
Modeling Data Access Legislation with Gorgias	317
<i>Nikolaos I. Spanoudakis, Elena Constantinou, Adamos Koumi, and Antonis C. Kakas</i>	
dARe – Using Argumentation to Explain Conclusions from a Controlled Natural Language Knowledge Base	328
<i>Adam Wyner and Hannes Strass</i>	

Intelligent Systems in Healthcare and mHealth for Health Outcomes

Exploring Parameter Tuning for Analysis and Optimization of a Computational Model	341
<i>Julia S. Mollee, Eric F.M. Araújo, and Michel C.A. Klein</i>	
Empirical Validation of a Computational Model of Influences on Physical Activity Behavior.	353
<i>Julia S. Mollee and Michel C.A. Klein</i>	
Detecting Drinking-Related Contents on Social Media by Classifying Heterogeneous Data Types	364
<i>Omar ElTayeb, Todd Eaglin, Malak Abdullah, David Burlinson, Wenwen Dou, and Lixia Yao</i>	
Estimating Disease Burden Using Google Trends and Wikipedia Data	374
<i>Riyi Qiu, Mirsad Hadzikadic, and Lixia Yao</i>	
Knowledge-Based Approach for Named Entity Recognition in Biomedical Literature: A Use Case in Biomedical Software Identification	386
<i>Muhammad Amith, Yaoyun Zhang, Hua Xu, and Cui Tao</i>	

Interweaving Domain Knowledge and Unsupervised Learning for Psychiatric Stressor Extraction from Clinical Notes	396
<i>Olivia R. Zhang, Yaoyun Zhang, Jun Xu, Kirk Roberts, Xiang Y. Zhang, and Hua Xu</i>	

Innovative Applications of Textual Analysis Based on AI

Active Learning for Text Mining from Crowds.	409
<i>Hao Shao</i>	
Chinese Lyrics Generation Using Long Short-Term Memory Neural Network.	419
<i>Xing Wu, Zhikang Du, Mingyu Zhong, Shuji Dai, and Yazhou Liu</i>	
CN-DBpedia: A Never-Ending Chinese Knowledge Extraction System	428
<i>Bo Xu, Yong Xu, Jiaqing Liang, Chenhao Xie, Bin Liang, Wanyun Cui, and Yanghua Xiao</i>	
Aspect-Based Rating Prediction on Reviews Using Sentiment Strength Analysis.	439
<i>Yinglin Wang, Yi Huang, and Ming Wang</i>	
Using Topic Labels for Text Summarization.	448
<i>Wanqiu Kou, Fang Li, and Zhe Ye</i>	
Pair-Aware Neural Sentence Modeling for Implicit Discourse Relation Classification	458
<i>Deng Cai and Hai Zhao</i>	
Author Index	467

Advances in Artificial Intelligence: From Theory to
Practice

30th International Conference on Industrial Engineering
and Other Applications of Applied Intelligent Systems,
IEA/AIE 2017, Arras, France, June 27-30, 2017,
Proceedings, Part I

Benferhat, S.; Tabia, K.; Ali, M. (Eds.)

2017, XXIX, 642 p. 183 illus., Softcover

ISBN: 978-3-319-60041-3