

Contents – Part I

Multi-agent Systems

A Novel Interaction Protocol of a Multiagent System for the Study of Alternative Decisions.	3
<i>Florin Leon</i>	
Modeling Internalizing and Externalizing Behaviour in Autism Spectrum Disorders.	13
<i>Laura M. van der Lubbe, Jan Treur, and Willeke van Vught</i>	
Analysis and Refinement of a Temporal-Causal Network Model for Absorption of Emotions	27
<i>Eric Fernandes de Mello Araújo and Jan Treur</i>	
Cognitive Modelling of Emotion Contagion in a Crowd of Soccer Supporter Agents	40
<i>Berend Jutte and C. Natalie van der Wal</i>	
The Role of Mood on Emotional Agents Behaviour	53
<i>Petros Kefalas, Ilias Sakellariou, Suzie Savvidou, Ioanna Stamatopoulou, and Marina Ntika</i>	
Modelling a Mutual Support Network for Coping with Stress.	64
<i>Lenin Medeiros, Ruben Sikkes, and Jan Treur</i>	

Knowledge Engineering and Semantic Web

Knowledge Integration Method for Supply Chain Management Module in a Cognitive Integrated Management Information System	81
<i>Marcin Hernes</i>	
An Asymmetric Approach to Discover the Complex Matching Between Ontologies.	90
<i>Fatma Kaabi and Faiez Gargouri</i>	
An Evidential Approach for Managing Temporal Relations Uncertainty	98
<i>Nessrine El Hadj Salem, Allel Hadjali, Aymen Gammoudi, and Boutheina Ben Yaghlane</i>	
An Improvement of the Two-Stage Consensus-Based Approach for Determining the Knowledge of a Collective	108
<i>Van Du Nguyen, Ngoc Thanh Nguyen, and Dosam Hwang</i>	

Natural Language and Text Processing

An Approach to Subjectivity Detection on Twitter Using the Structured Information	121
<i>Juan Sixto, Aitor Almeida, and Diego López-de-Ipiña</i>	
WSD-TIC: Word Sense Disambiguation Using Taxonomic Information Content	131
<i>Mohamed Ben Aouicha, Mohamed Ali Hadj Taieb, and Hania Ibn Marai</i>	
What Makes Your Writing Style Unique? Significant Differences Between Two Famous Romanian Orators.	143
<i>Mihai Dascalu, Daniela Gifu, and Stefan Trausan-Matu</i>	
A Novel Approach to Identify Factor Posing Pronunciation Disorders	153
<i>Naim Terbeh and Mounir Zrigui</i>	
Towards an Automatic Intention Recognition from Client Request	163
<i>Noura Labidi, Tarak Chaari, and Rafik Bouaziz</i>	

Data Mining Methods and Applications

Fuzzy Cognitive Maps for Long-Term Prognosis of the Evolution of Atmospheric Pollution, Based on Climate Change Scenarios: The Case of Athens.	175
<i>Vardis-Dimitris Anezakis, Konstantinos Dermetzis, Lazaros Iliadis, and Stefanos Spartalis</i>	
The Results of a Complex Analysis of the Modified Pratt- Yaskorskiy Performance Metrics Based on the Two-Dimensional Markov-Renewal-Process	187
<i>Viktor Geringer, Dmitry Dubinin, and Alexander Kochegurov</i>	
Generic Ensemble-Based Representation of Global Cardiovascular Dynamics for Personalized Treatment Discovery and Optimization	197
<i>Olga Senyukova, Valeriy Gavrishchaka, Maria Sasonko, Yuri Gurfinkel, Svetlana Gorokhova, and Nikolay Antsygin</i>	
Avoiding the Curse of Dimensionality in Local Binary Patterns	208
<i>Karel Petranek, Jan Vanek, and Eva Milkova</i>	
On the Foundations of <i>Multinomial</i> Sequence Based Estimation	218
<i>B. John Oommen and Sang-Woon Kim</i>	
Global Solar Radiation Prediction Using Backward Propagation Artificial Neural Network for the City of Addis Ababa, Ethiopia	230
<i>Younas Worki, Eshetie Berhan, and Ondrej Krejcar</i>	

Determining the Criteria for Setting Input Parameters of the Fuzzy Inference Model of P&R Car Parks Locating	239
<i>Michał Lower and Anna Lower</i>	
On Systematic Approach to Discovering Periodic Patterns in Event Logs. . . .	249
<i>Marcin Zimniak and Janusz R. Getta</i>	
The Fuzzy Approach to Assessment of ANOVA Results	260
<i>Jacek Pietraszek, Maciej Kołomycki, Agnieszka Szczotok, and Renata Dwornicka</i>	
Virtual Road Condition Prediction Through License Plates in 3D Simulation	269
<i>Orcan Alpar and Ondrej Krejcar</i>	

Decision Support and Control Systems

Creating a Knowledge Base to Support the Concept of Lean Administration Using Expert System NEST	281
<i>Radim Dolak</i>	
Fuzzy Bionic Hand Control in Real-Time Based on Electromyography Signal Analysis.	292
<i>Martin Tabakov, Krzysztof Fonal, Raed A. Abd-Alhameed, and Rami Qahwaji</i>	
Controllability of Positive Discrete-Time Switched Fractional Order Systems for Fixed Switching Sequence.	303
<i>Artur Babiarczyk, Adrian Łęgowski, and Michał Niezabitowski</i>	
A Trace Clustering Solution Based on Using the Distance Graph Model	313
<i>Quang-Thuy Ha, Hong-Nhung Bui, and Tri-Thanh Nguyen</i>	
On Expressiveness of $TCTL_h^A$ for Model Checking Distributed Systems.	323
<i>Naima Jbeli, Zohra Sbaï, and Rahma Ben Ayed</i>	

Innovations in Intelligent Systems

Cost Optimizing Methods for Deterministic Queuing Systems.	335
<i>Martin Gavalec and Zuzana Němcová</i>	
User Authentication Through Keystroke Dynamics as the Protection Against Keylogger Attacks.	345
<i>Adrianna Kozierkiewicz-Hetmańska, Aleksander Marciniak, and Marcin Pietranik</i>	
Data Warehouses Federation as a Single Data Warehouse	356
<i>Rafał Kern</i>	

A Solution for Automatically Malicious Web Shell and Web Application Vulnerability Detection	367
<i>Van-Giap Le, Huu-Tung Nguyen, Dang-Nhac Lu, and Ngoc-Hoa Nguyen</i>	
Data Evolution Method in the Procedure of User Authentication Using Keystroke Dynamics	379
<i>Adrianna Kozierkiewicz-Hetmanska, Aleksander Marciniak, and Marcin Pietranik</i>	
Cooperative Strategies for Decision Making and Optimization	
Multiagent Cooperation for Decision-Making in the Car-Following Behavior	391
<i>Anouer Bennajeh, Fahem Kebair, Lamjed Ben Said, and Samir Aknine</i>	
GRASP Applied to Multi-Skill Resource-Constrained Project Scheduling Problem.	402
<i>Paweł B. Myszkowski and Jędrzej J. Siemiński</i>	
Biological Regulation and Psychological Mechanisms Models of Adaptive Decision-Making Behaviors: Drives, Emotions, and Personality	412
<i>Amine Chohra and Kurosh Madani</i>	
A Constraint-Based Approach to Modeling and Solving Resource-Constrained Scheduling Problems	423
<i>Paweł Sitek and Jarosław Wikarek</i>	
Some Remarks on the Mean-Based Prioritization Methods in AHP	434
<i>Konrad Kułakowski and Anna Kędzior</i>	
Bi-criteria Data Reduction for Instance-Based Classification	444
<i>Ireneusz Czarnowski, Joanna Jędrzejowicz, and Piotr Jędrzejowicz</i>	
Dynamic Cooperative Interaction Strategy for Solving RCPSP by a Team of Agents.	454
<i>Piotr Jędrzejowicz and Ewa Ratajczak-Ropel</i>	
Influence of the Waiting Strategy on the Performance of the Multi-Agent Approach to the DVRPTW	464
<i>Dariusz Barbucha</i>	
Local Termination Criteria for Stochastic Diffusion Search: A Comparison with the Behaviour of Ant Nest-Site Selection	474
<i>J. Mark Bishop, Andrew O. Martin, and Elva J.H. Robinson</i>	

Meta-Heuristics Techniques and Applications

Optimizing Urban Public Transportation with Ant Colony Algorithm	489
<i>Elena Kochegurova and Ekaterina Gorokhova</i>	
A Hybrid Approach Based on Particle Swarm Optimization and Random Forests for E-Mail Spam Filtering	498
<i>Hossam Faris, Ibrahim Aljarah, and Bashar Al-Shboul</i>	
Fuzzy Logic and PD Control Strategies of a Three-Phase Electric Arc Furnace	509
<i>Loredana Ghiormez, Octavian Prostean, Manuela Panoiu, and Caius Panoiu</i>	
Hybrid Harmony Search Combined with Variable Neighborhood Search for the Traveling Tournament Problem.	520
<i>Meriem Khelifa and Dalila Boughaci</i>	

Web Systems and Human-Computer Interaction

Utilizing Linked Open Data for Web Service Selection and Composition to Support e-Commerce Transactions.	533
<i>Nikolaos Vesyropoulos, Christos K. Georgiadis, and Elias Pimenidis</i>	
Improved Method of Detecting Replay Logo in Sports Videos Based on Contrast Feature and Histogram Difference	542
<i>Kazimierz Choroś and Adam Gogol</i>	
Dynamic MCDA Approach to Multilevel Decision Support in Online Environment.	553
<i>Jarosław Jankowski, Jarosław Wątróbski, and Paweł Ziemia</i>	
Usability Testing of a Mobile Friendly Web Conference Service.	565
<i>Ida Błażejczyk, Bogdan Trawiński, Agnieszka Indyka-Piasecka, Marek Kopel, Elżbieta Kukla, and Jarosław Bernacki</i>	
Latent Email Communication Patterns	580
<i>Miloš Vacek</i>	
Spectral Saliency-Based Video Deinterlacing	590
<i>Umang Aggarwal, Maria Trocan, and Francois-Xavier Coudoux</i>	
Author Index	599

Contents – Part II

Applications of Software Agents

Agent-Based Approach for Ship Damage Control	3
<i>Eugénio Oliveira and Paulo Martins</i>	
Collective Profitability and Welfare in Selling-Buying Intermediation Processes	14
<i>Amelia Bădică, Costin Bădică, Mirjana Ivanović, and Ionuț Buligiu</i>	
Fault-Tolerance in XJAF Agent Middleware.	25
<i>Mirjana Ivanović, Jovana Ivković, Milan Vidaković, Nikola Luburić, and Costin Bădică</i>	
Agent-Based Support of a Virtual eLearning Space	35
<i>Emil Doychev, Asya Stoyanova-Doycheva, Stanimir Stoyanov, and Vanya Ivanova</i>	
Generalized Nets for Agent-Based Modeling	45
<i>Galina Ilieva and Stanislava Klisarova</i>	

Social Media and the Web of Linked Data

Networking Readers: Using Semantic and Geographical Links to Enhance e-Books Reading Experience	59
<i>Dan Cristea, Ionuț Pistol, Daniela Gîfu, and Daniel Anechitei</i>	
Detecting Satire in Italian Political Commentaries	68
<i>Rodolfo Delmonte and Michele Stingo</i>	
Semantic Diversification of Text Search Results	78
<i>Andrei Micu and Adrian Iftene</i>	

Computational Swarm Intelligence

Ant Colony System with a Restart Procedure for TSP	91
<i>Rafał Skinderowicz</i>	
Differential Cryptanalysis of FEAL4 Using Evolutionary Algorithm	102
<i>Kamil Dworak and Urszula Boryczka</i>	
Differential Evolution in a Recommendation System Based on Collaborative Filtering	113
<i>Urszula Boryczka and Michał Bałchanowski</i>	

Using Genetic Algorithm to Aesthetic Patterns Design.	123
<i>Grzegorz T. Machnik, Miłosław Chodacki, and Wiesław Kotarski</i>	

Ambient Networks

A Survey of ADAS Technologies for the Future Perspective of Sensor Fusion.	135
<i>Adam Ziebinski, Rafal Cupek, Hueseyin Erdogan, and Sonja Waechter</i>	
Modified Random Forest Algorithm for Wi-Fi Indoor Localization System . . .	147
<i>Rafał Górak and Marcin Luckner</i>	
Smart Underwater Positioning System and Simultaneous Communication. . . .	158
<i>Bogusław Szlachetko and Michał Lower</i>	
Hierarchical Data Aggregation Based Routing for Wireless Sensor Networks.	168
<i>Soumyabrata Saha, Rituparna Chaki, and Nabendu Chaki</i>	
Towards Cloud-Based Data Warehouse as a Service for Big Data Analytics . . .	180
<i>Hichem Dabbèchi, Ahlem Nabli, and Lotfi Bouzguenda</i>	
Performance Comparison of Sensor Implemented in Smartphones with X-IMU.	190
<i>Juraj Machaj, Jan Racko, and Peter Brida</i>	
Design Solution of Centralized Monitoring System of Airport Facilities.	200
<i>Josef Horalek and Tomas Svoboda</i>	
Room-Level Indoor Localization Based on Wi-Fi Signals.	209
<i>Filip Maly, Pavel Kriz, and Martin Jedlicka</i>	
IPv6 Firewall Functions Analysis	219
<i>Josef Horalek and Vladimír Sobeslav</i>	

Information Technology in Biomedicine

Novel Edge Detection Scheme in the Trinion Space for Use in Medical Images with Multiple Components	231
<i>Dawit Assefa and Ondrej Krejcar</i>	
Simulations of Light Propagation and Thermal Response in Biological Tissues Accelerated by Graphics Processing Unit	242
<i>Jakub Mesicek, Jan Zdarsky, Rafael Dolezal, Ondrej Krejcar, and Kamil Kuca</i>	

Comparison of RUST and C# as a Tool for Creation of a Large Agent-Based Simulation for Population Prediction of Patients with Alzheimer's Disease in EU	252
<i>Richard Cimler, Ondřej Doležal, and Pavel Pschaidl</i>	
Dorsal Hand Recognition Through Adaptive YCbCr Imaging Technique	262
<i>Orcan Alpar and Ondrej Krejcar</i>	
Designing QSAR Models for Promising TLR4 Agonists Isolated from <i>Euodia Asteridula</i> by Artificial Neural Networks Enhanced by Optimal Brain Surgeon	271
<i>Rafael Dolezal, Jan Trejbal, Jakub Mesicek, Agata Milanov, Veronika Racakova, and Jiri Krenek</i>	
Exploration of Autoimmune Diseases Using Multi-agent Systems	282
<i>Richard Cimler, Martina Husáková, and Martina Koláčková</i>	
Decision Support Biomedical Application Based on Consistent Optimization of Preference Matrices	292
<i>Richard Cimler, Martin Gavalec, Karel Mls, and Daniela Ponce</i>	
Implementation of Artificial Neural Network on Graphics Processing Unit for Classification Problems	303
<i>Syahid Anuar, Roselina Sallehuddin, and Ali Selamat</i>	
Impact of Smart and Intelligent Technology on Education	
Ontology-Based Education Support System for Solving Emergency Incidents	313
<i>Martina Husáková</i>	
Innovations in Software Engineering Subjects	323
<i>Petra Poulova and Ivana Simonova</i>	
Collective Unconscious Interaction Patterns in Classrooms	333
<i>Roberto Araya and Josefina Hernández</i>	
Smart Mobile Devices in the Higher Education: Comparative Study of FIM UHK in 2013/14 to 2015/16	343
<i>Petra Poulova and Ivana Simonova</i>	
Motivation System on Prediction Market	354
<i>Mikuláš Gangur</i>	
Decision Processes in Smart Learning Environments	364
<i>Peter Mikulecky</i>	

Big Data Mining and Searching

Upgrading Event and Pattern Detection to Big Data	377
<i>Soumaya Cherichi and Rim Faiz</i>	
A Graph-Path Counting Approach for Learning Head Output Connected Relations	387
<i>Nuran Peker and Alev Mutlu</i>	
A Framework for Analysis of Ontology-Based Data Access	397
<i>Agnieszka Konys</i>	
Towards a Real-Time Big GeoData Geolocation System Based on Visual and Textual Features.	409
<i>Sarra Hasni and Sami Faiz</i>	
A Parallel Implementation of Relief Algorithm Using Mapreduce Paradigm . . .	418
<i>Jamila Yazidi, Waad Bouaguel, and Nadia Essoussi</i>	

Machine Learning in Medicine and Biometrics

Rational Discovery of GSK3-Beta Modulators Aided by Protein Pocket Prediction and High-Throughput Molecular Docking	429
<i>Rafael Dolezal, Michaela Melikova, Jakub Mesicek, and Kamil Kuca</i>	
A Machine-Learning Approach to the Automated Assessment of Joint Synovitis Activity	440
<i>Konrad Wojciechowski, Bogdan Smolka, Rafal Cupek, Adam Ziebinski, Karolina Nurzynska, Marek Kulbacki, Jakub Segen, Marcin Fojcik, Pawel Mielnik, and Sebastian Hein</i>	
Intersection Method, Union Method, Product Rule and Weighted Average Method in a Dispersed Decision-Making System - a Comparative Study on Medical Data	451
<i>Małgorzata Przybyła-Kasperek and Agnieszka Nowak-Brzezińska</i>	
The Application of the Region Growing Method to the Determination of Arterial Changes	462
<i>Ewelina Sobotnicka, Aleksander Sobotnicki, Krzysztof Horoba, and Piotr Porwik</i>	
Mining Medical Knowledge Bases	472
<i>Agnieszka Nowak-Brzezińska, Tomasz Rybotycki, Roman Simiński, and Małgorzata Przybyła-Kasperek</i>	
The Matching Method for Rectified Stereo Images Based on Minimal Element Distance and RGB Component Analysis	482
<i>Pawel Popielski, Robert Koprowski, Zygmunt Wróbel, Sławomir Wilczyński, Rafał Doroz, Krzysztof Wróbel, and Piotr Porwik</i>	

KBExplorator and KBExpertLib as the Tools for Building Medical Decision Support Systems	494
<i>Roman Simiński and Agnieszka Nowak-Brzezińska</i>	
Building Medical Guideline for Intensive Insulin Therapy of Children with T1D at Onset	504
<i>Rafał Deja</i>	
A New Personal Verification Technique Using Finger-Knuckle Imaging	515
<i>Rafał Doroz, Krzysztof Wrobel, Piotr Porwik, Hossein Safaverdi, Michał Senejko, Janusz Jezewski, Paweł Popielski, Sławomir Wilczyński, Robert Koprowski, and Zygmunt Wrobel</i>	
Automatic Detection of Fetal Abnormality Using Head and Abdominal Circumference	525
<i>Vidhi Rawat, Alok Jain, Vibhakar Shrimali, and Abhishek Rawat</i>	
Low Resource Language Processing	
On One Approach of Solving Sentiment Analysis Task for Kazakh and Russian Languages Using Deep Learning.	537
<i>Narynov Sergazy Sakenovich and Arman Serikuly Zharmagambetov</i>	
Morphological Transducer for Mongolian.	546
<i>Zoljargal Munkhjargal, Altangerel Chaganaa, and Purev Jaimai</i>	
An Approach of Automatic Extraction of Domain Keywords from the Kazakh Text	555
<i>Yermek Alimzhanov and Madina Mansurova</i>	
Inferring of the Morphological Chunk Transfer Rules on the Base of Complete Set of Kazakh Endings	563
<i>Ualsher Tukeyev, Aida Sundetova, Balzhan Abduali, Zhadyra Akhmediyeva, and Nurbolat Zhanbussunov</i>	
Author Index	575

Computational Collective Intelligence

8th International Conference, ICCCI 2016, Halkidiki,
Greece, September 28-30, 2016. Proceedings, Part I
Nguyen, N.T.; Iliadis, L.; Manolopoulos, Y.; Trawiński, B.
(Eds.)

2016, XXIX, 602 p. 186 illus., Softcover

ISBN: 978-3-319-45242-5