

# **2008 International Conference on Computational Intelligence for Modelling Control & Automation (CIMCA 2008)**

**Vienna, Austria  
10 – 12 December 2008**

**Pages 1 - 650**



**IEEE Catalog Number: CFP0814A-PRT  
ISBN: 978-1-4244-3329-2**

# CIMCA 2008, IAWTIC 2008, and ISE 2008

---

## CIMCA 2008 Table of Contents

---

### **Session: Intelligent Web Applications and Information Systems**

Seller's Strategies for Predicting Winning Bid Prices in Online Auctions .....	1
<i>Yevgeniya Kovalchuk</i>	
Data Warehouse Architecture through Viewpoint of Information System Architecture .....	7
<i>Maria M. Dias, Tania C. Tait, André Luis A. Menolli, and Roberto C. S. Pacheco</i>	
The Inner Structure of Database for the CBIR System .....	13
<i>Tatiana Jaworska</i>	
OFDM Information Hiding Method by Preposition Embedded QIM .....	19
<i>Tie-sheng Fan, Jian-sheng Xue, Wei-hong Xuan, and Da-peng Qu</i>	
RIAL: Redundancy Reducing Inlining Algorithm to Map XML DTD to Relations .....	25
<i>Amir Jahangard Rafsanjani and Seyed-Hassan Mirian-Hosseinabadi</i>	

### **Session: Data Mining Knowledge Discovery and Decision Making**

An Architecture for Next-Generation of Telecare Systems Using Ontologies, Rules Engines and Data Mining .....	31
<i>Rocio Martínez-López, David Millán-Ruiz, Alberto Martín-Domínguez, and María Aránzazu Toro-Escudero</i>	

Knowledge Discovery from Trouble Ticketing Reports in a Large Telecommunication Company .....	37
<i>Yaiza Temprado, Francisco Javier Molinero, Carolina García, and Julia Gómez</i>	
Exploring the Design Space of Symbolic Music Genre Classification Using Data Mining Techniques .....	43
<i>Christian Kofod and Daniel Ortiz-Arroyo</i>	

### **Session: Advances in Software Engineering**

Comparing Agile Software Processes Based on the Software Development Project Requirements .....	49
<i>Malik Qasaimeh, Hossein Mehrfard, and Abdelwahab Hamou-Lhadj</i>	
Silent Unattended Installation Package Manager--SUIPM .....	55
<i>Umar Manzoor and Samia Nefti</i>	
Business Challenge Based Evaluations--Using Methods of Social Research to Gather Quality Characteristics and Increase Software Quality .....	61
<i>Michael Amberg, Timo Holm, and Kristian Dencovski</i>	
To Create Adaptive Game Opponent by Using UCT .....	67
<i>Suoju He, Fan Xie, Yi Wang, Sai Luo, Yiwen Fu, Jiajian Yang, Zhiqing Liu, and Qiliang Zhu</i>	
Efficient and Robust Content Based Searching Based on XML Technology .....	71
<i>Kabeer Ahmed, Nabeel Youmus, Bilal Rauf, and Jamshaid Ashraf</i>	

### **Session: Innovation in Software Engineering, Project Management and Software Quality**

Modeling User Specification Based on Supervisor Control and Petri Nets .....	76
<i>Yujin Song, Jongwoog Kim, and Jongkun Lee</i>	
Curve Shape Modification and Fairness Evaluation for Computer Aided Aesthetic Design .....	82
<i>Tetsuzo Kuragano and Kazuhiro Kasono</i>	
A Comparison Study of End-to-End Delay Using Different Active Queue Management Algorithms .....	88
<i>Harish H. Kenchannavar, U. P. Kulkarni, and A. R. Yardi</i>	
A Comparison of Heuristic Search Algorithms for Predicting the Effort Component of Software Projects .....	92
<i>Mitat Uysal</i>	

### **Session: Intelligent Agents, Ontology and Web Applications**

A Multiagent Architecture for Supervisory and Control System .....	98
<i>Ivan Rizzo Guilherme, Rafael Pedrosanto, Alex F. Teixeira, Celso K. Morooka, and Carles Sierra</i>	

Illustration of a Multi-agent Systems Concept as User’s Collaborative Software System .....	104
<i>Ebrahim AlHashel and Masoud Mohammadian</i>	
FOMatch: A Fuzzy Ontology-Based Semantic Matching Algorithm of Publish/Subscribe Systems .....	111
<i>Weiwei Zhang, Jiangan Ma, and Dan Ye</i>	
A Meta-ontology for Architecture Description Languages and MDA Platforms .....	118
<i>Alti Adel and Smeda Adel</i>	

### **Session: Virtual Reality, Games (Encryption and Security E-Commerce Applications)**

Design of Secure Group Key Management Scheme for Multicast Networks Using Number Theory .....	124
<i>E. Munivel and J. Lokesh</i>	
Multi-Agent Petri-Games .....	130
<i>Rustam Tagiew</i>	
Email Security Using Encryption and Compression .....	136
<i>Yogendra Kumar Jain and Pramod B. Gosavi</i>	
Blind Synthesis Attack on SVD Based Watermarking Techniques .....	140
<i>Rowayda A. Sadek</i>	

### **Session: Software Testing, System Development, and System Quality Assurance**

Product Line Variability with Elastic Components and Test-Driven Development .....	146
<i>George Kakarontzas, Ioannis Stamelos, and Panagiotis Katsaros</i>	
A Descriptive Programming Based Approach for Test Automation .....	152
<i>Tarun Agarwal</i>	
Evaluation of Test Criteria for Space Application Software Modeling in Statecharts .....	157
<i>Érica Ferreira, Valdivino Santiago, Danielle Guimarães, and Nandamudi L. Vijaykumar</i>	
Test Case Generation for Critical Systems through a Collaborative Web-Based Tool .....	163
<i>Alessandro Oliveira Arantes, Nandamudi Lankalapalli Vijaykumar, Valdivino Alexandre de Santiago Junior, and Danielle Guimarães</i>	
A Quality Gaps Roadmap for a Website Usability Process .....	169
<i>Luisa Mich, Mariangela Franch, and Nadzeya Kiyavitskaya</i>	

### **Session: Advanced Image Processing and Image Understanding Techniques**

Visual-Based Online Signature Verification by Pen Tip Tracking .....	175
<i>Kumiko Yasuda, Daigo Muramatsu, and Takashi Matsumoto</i>	

A LDCT Image Contrast Enhancement Algorithm Based on Single-scale Retinex Theory .....	181
<i>Guodong Zhang, Donghong Sun, Peiyu Yan, Hong Zhao, and Zhezhu Li</i>	
On the Potential of Hermann Weyl's Discrepancy Norm for Texture Analysis .....	187
<i>Bernhard Moser, Peter Haslinger, and Tomáš Kazmar</i>	
Separation of Visual Scene Fragments via Oscillatory Network Method .....	192
<i>E. S. Grichuk, M. G. Kuzmina, and E. A. Manykin</i>	

### **Session: Advances in Modelling, Prediction and Control**

Age Estimation Robust to Expression Variations .....	198
<i>Li Lu, Ziyi Xu, Yuan Hu, and Pengfei Shi</i>	
Adaptive Optimal Control for a One-Machine Infinite-Bus Power System .....	202
<i>Amir Mohammad Sayidi, M. Ali Nekoui, and N. Seifi Boghrabadi</i>	
Chaos Suppression in the Uncertain Van Der Pol Oscillator .....	208
<i>N. Seifi Boghrabadi, M. Reza Jahed Motlagh, and Amir Mohammad Sayidi</i>	
Statistical Inferences by Gaussian Markov Random Fields on Complex Networks .....	214
<i>Kazuyuki Tanaka, Takafumi Usui, and Muneki Yasuda</i>	
Guaranteed Cost Control for Nonlinear Networked Control Systems with Uncertainty .....	220
<i>Yong Zhang</i>	

### **Session: Fault Diagnostics, Intelligent Modelling and Control**

On-Line Monotonic Fault Diagnostics via Recursive Constrained Quadratic Programming .....	226
<i>Sikandar Samar, Andrey Torzhkov, and Amit Chakraborty</i>	
Network-Based Intelligent Control Systems .....	232
<i>Toru Fujinaka and Sigeru Omatu</i>	
A MATLAB Toolbox for Finding Stabilizing Controllers for a Class of Switched Systems .....	238
<i>Sallehuddin Mohamed Haris and Eric Rogers</i>	
Adaptive Local Learning Soft Sensor for Inferential Control Support .....	243
<i>Petr Kadlec and Bogdan Gabrys</i>	
Modeling Strategy by Adaptive Genetic Algorithm for Production Reactive Scheduling with Simultaneous Use of Machines and AGVs .....	249
<i>D. S. Sanches, O. Morandin Jr., B. D. Muniz, and E. R. R. Kato</i>	

## **Session: Advanced Image and Video Coding and Image Understanding Techniques**

Effective Multiview Video Coding Using a Scalable Depth Map .....	255
<i>Junsang Cho, Sukhee Cho, Namho Hur, Hyuk Lee, and Jechang Jeong</i>	
Research on the Video Segmentation Method with Integrated Multi-features Based on GMM .....	260
<i>Herong Zheng, Zhi Liu, and Xiaofeng Wang</i>	
GA and Morphology Based Automated Segmentation of Lungs from CT Scan Images .....	265
<i>M. Arfan Jaffar, Ayyaz Hussain, M. Nazir, Anwar M. Mirza, and Asmatullah Chaudhry</i>	

## **Session: Information Systems, Web Technologies and Semantic Web**

Automatic Web Service Composition Using OWL-S and Fluent Calculus .....	271
<i>Viorica R. Chifu, Ioan Salomie, and Emil St. Chifu</i>	
Taxonomies and Ontologies in Web Semantic Applications: The New Emerging Semantic Lexicon-Based Model .....	277
<i>Vincenzo Di Lecce and Marco Calabrese</i>	
Web Services Composition: Mashups Driven Orchestration Definition .....	284
<i>Sébastien Mosser, Franck Chauvel, Mireille Blay-Fornarino, and Michel Riveill</i>	

## **Session: Software Development, System Quality Assurance and Reliability**

MAMIE: A Methodology to Elicit Requirements in Inter-company Co-operative Information Systems .....	290
<i>Hakim Bendjenna, Nacer Eddine Zarour, and Pierre-Jean Charrel</i>	
Mutation Analysis for the Evaluation of AD Models .....	296
<i>U. Farooq and C. P. Lam</i>	
Analyzing Resource-Usage Impact on Component-Based Systems Performance and Reliability .....	302
<i>Aida Čaušević, Paul Pettersson, and Cristina Secoleanu</i>	
Space Based Architecture for Numerical Solving .....	309
<i>Cyril Dumont and Fabrice Mourlin</i>	
A Study of Value of Business Process Models from a Managerial Viewpoint .....	315
<i>Shoichi Morimoto</i>	

## **Session: Innovative Software Development**

Agile Software Development Methods and Practices in Austrian IT-Industry: Results of an Empirical Study .....	321
<i>Christian Schindler</i>	
Common Software-Aging-Related Faults in Fault-Tolerant Systems .....	327
<i>Long Zhao, QinBao Song, and Lei Zhu</i>	

Conflict Resolution in Multiuser Context-Aware Environments .....	332
<i>G. S. Thyagaraju, S. M. Joshi, Umakant P. Kulkarni, and S. K. NarasimhaMurthy. A. R. Yardi</i>	
Eliciting a Retirement Process Model: Case Study 2 .....	339
<i>Mira Kajko-Mattsson, Ralf Fredriksson, and Anna Hauzenberger</i>	
Connector-Driven Gradual and Dynamic Software Assembly Evolution .....	345
<i>Huaxi (Yulin) Zhang, Christelle Urtado, and Sylvain Vauttier</i>	
3CI: A Tool for Crosscutting Concern Identification .....	351
<i>Busyairah Syd Ali and Zarinah Mohd. Kasirun</i>	
The C++ Hybrid Imperative Meta-Programmer: CHIMP .....	356
<i>John L. Kenyon, Frederick C. Harris Jr., and Sergiu M. Dascalu</i>	

### **Session: Fuzzy Systems for Industrial Automation**

Learning Human Behavior Patterns for Proactive Service System: Agglomerative Fuzzy Clustering-Based Fuzzy-State Q-learning .....	362
<i>Sang Wan Lee, Yong Soo Kim, and Zeungnam Bien</i>	
A Probabilistic Cluster Validity Index for Agglomerative Bayesian Fuzzy Clustering .....	368
<i>Sang Wan Lee, Yong Soo Kim, and Zeungnam Bien</i>	
Predictive Adaptive Control of Nonlinear Multivariable Systems Using Fuzzy CMAC .....	374
<i>Kamran Mohajeri, Mohammad Teshnehlab, Mohammad Ali Nekoui, and Bijan Moaveni</i>	
Generalized Bags and Bag Relations: Toward an Alternative Model for Fuzzy Set Applications .....	380
<i>Sadaaki Miyamoto</i>	
ARG_FuzzySim: Concluding Failed Multilateral Argumentation-Based Negotiation .....	386
<i>Ines Barhoumi, Ilhem Kallel, and Adel M. Alimi</i>	
Neuro-Fuzzy System with Hierarchical Domain Partition .....	392
<i>Krzysztof Simiński</i>	
Fuzzy Type-2 Nash Equilibrium .....	398
<i>Alireza Chakeri, Jafar Habibi, and Yasamin Heshmat</i>	

### **Session: Innovative Modelling, Analysis and Control Strategies**

Consciousness Changes the Output Signal of Solar Cell and the New Cognitive Model with Mass Energy Space Time System .....	403
<i>Dayong Cao</i>	
Kinematics and Dynamics of a Wheeled Mobile Inverted Pendulum .....	409
<i>Asemeh Pousti and Mehmet Bodur</i>	
On Preprocessing Multi-channel Sensor Data for Online Process Monitoring .....	414
<i>Holger Schöner, Bernhard Moser, and Edwin Lughofer</i>	

Statistical Deformable Model Based Weld Defect Contour Estimation in Radiographic Inspection .....	420
<i>Aicha Baya Goumeidane, Mohammed Khamadja, Nafaa Nacereddine, and Faiza Mekhalfa</i>	

### **Session: Advanced Neural Networks Applications**

PM-10 Forecasting Using Neural Networks Model .....	426
<i>S. H. Yu, Y. S. Koo, E. Y. Ha, and H. Y. Kwon</i>	
A Methodology for Evaluation the Usability of Software for Industrial Automation Using Artificial Neural Networks: Case Study--Eletrobrás .....	430
<i>Márcio José Moutinho da Ponte and Antonio Morais da Silveira</i>	

### **Session: Clustering, Classification, Data Mining and Risk Analysis**

Web Pages Classification and Clustering by Means of Genetic Algorithms: A Variable Size Page Representing Approach .....	436
<i>Zahra Hossaini, Amir Masoud Rahmani, and Saied Setayeshi</i>	
Stable Classification in Environments with Varying Degrees of Uncertainty .....	441
<i>Andreas Buschermöhle, Nils Rosemann, and Werner Brockmann</i>	
A Pistachio Nuts Classification Technique: An ANN Based Signal Processing Scheme .....	447
<i>Somaieh Mahdavi-Jafari, Hojjat Salehinejad, and Siamak Talebi</i>	
TV Advertisements Detection and Clustering Based on Acoustic Information .....	452
<i>David Conejero and Xavier Anguera</i>	

### **Session: Agent Systems: Theory and Applications**

Multi Agent Negotiation for a Decision Support System in Route Planning .....	458
<i>Vincenzo Di Lecce and Alberto Amato</i>	
Interaction Models for Multiagent Reinforcement Learning .....	464
<i>Richardson Ribeiro, André P. Borges, and Fabricio Enembreck</i>	
Verifying Epistemic Properties of Multi-agent Systems via Action-Based Temporal Logic .....	470
<i>Marina Bagić, Aleksandar Babac, and Mojca Ciglarič</i>	
A Multi-agent Simulation Platform for Web Service QoS Selection Modeling .....	476
<i>Ziad Kobti and Ding Chen</i>	
Adaptive Agents for Sequential Vickrey Auctions with Homogeneous Goods .....	482
<i>Huiye Ma</i>	
Improved E-sourcing Strategy with Multi-agent Swarms .....	488
<i>Konrad Fuks, Arkadiusz Kawa, and Waldemar Wiczerzycki</i>	



## **Session: Innovations in Software Development, Workflow Engines and Advanced Systems Analysis**

Building a Workflow Engine for a Real World Use Case, Using Mature Java Components .....	494
<i>Manuel Teira and Óscar J. Díez</i>	
A Quantitative Measurement for Reputation of Web Service and Providers Based on Cloud Model .....	500
<i>Shouxin Wang, Li Zhang, and Na Ma</i>	
E-marketplaces: A Telecom Operator Perspective .....	506
<i>Carlos Bueno Royo and Francisco González Vidal</i>	
Towards an Ontological Intellectual Capital Based Model in Sustainable Business Performance .....	512
<i>B. Zadjabbari, P. Wongthongtham, and Farookh Khadeer Hussain</i>	
Analysing Boundary Objects to Develop Results that Support Business Goals .....	516
<i>María Laura Ponisio and Peter Vrugink</i>	
Automatic Detection of Shared Objects in Multithreaded Java Programs .....	522
<i>Munara Tolubaeva and Aysu Betin Can</i>	

## **Session: Advance Control Strategies for Parallel and Dynamic Systems**

A Solution for Integrated Manufacturing Operation Management .....	527
<i>Vladimir Filipov and Nikolinka Christova</i>	
Active Control of Lateral Vibration for Bogie Using Variable Structure Model Reference Adaptive Control .....	533
<i>A. Karami Mohamadi and N. Al-e-Ali</i>	
Lawn Mowing System for Known Areas .....	539
<i>Miri Weiss-Cohen, Igal Sirotnin, and Erez Rave</i>	

## **Session: Intelligent Control, Genetic Algorithms and Evolutionary Systems with Applications to Robotic Systems**

Collision-Free Composite $\eta_3$ -Splines Generation for Nonholonomic Mobile Robots by Parallel Variable-Length Genetic Algorithm .....	545
<i>Jiun-Hau Wei and Jing-Sin Liu</i>	
A Self-Organized Fuzzy-Neuro Reinforcement Learning System for Continuous State Space for Autonomous Robots .....	551
<i>Masanao Obayashi, Takashi Kuremoto, and Kunikazu Kobayashi</i>	
Mixed Particle Filtering for Maneuvering Target Tracking in Clutter .....	557
<i>Xiaojun Yang and Xiangmo Zhao</i>	
Neural Dynamic Control of a Nonholonomic Mobile Robot Incorporating the Actuator Dynamics .....	563
<i>Nardênio A. Martins, Douglas W. Bertol, Edson R. De Pieri, Eugênio B. Castelan, and Maria M. Dias</i>	

## **Session: Robotics and Automation**

Real-Time Collision Avoidance in the Environment with Moving Obstacles .....	569
<i>Toshiaki Ishikawa, Yoshiteru Nishimura, and Koichi Hori</i>	
Localization by Co-observing Robots .....	575
<i>Yoshiteru Nishimura, Toshiaki Ishikawa, and Koichi Hori</i>	
Human Robot Interaction Methods for Manipulating Comic Contents .....	580
<i>Hang-Bong Kang, Myung-Ho Ju, and Hyeyoon Woo</i>	
Information Consensus in Partial Synchronous Network of Multi-robot Systems .....	586
<i>XiaoLin Long and JingPing Jiang</i>	

## **Session: Fuzzy Logic, Hybrid Systems for Modelling, Control and Optimization**

Granular Computing Application to Hybrid Systems Control .....	592
<i>Francesco Rago</i>	
A Fuzzy Classifier Model for the Production Sequencing .....	597
<i>Orides Morandin Jr., Edilson Reis Rodrigues Kato, Ageu Moraes Duarte, and Allan Rodrigues Silva</i>	
Extending the Medical Concept of Reference Intervals Using Fuzzy Predicates .....	603
<i>Mario Drobits and Klaus-Peter Adlassnig</i>	

## **Session: Software Engineering**

JAction: A High-Level Surface Syntax for UML Action Semantics .....	609
<i>Christopher Diggins and Abdelwahab Hamou-Lhadj</i>	
Mapping UML Interaction Overview Diagram to Time Petri Net for Analysis and Verification of Embedded Real-Time Systems with Energy Constraints .....	615
<i>Ermeson Andrade, Paulo Maciel, Gustavo Callou, and Bruno Nogueira</i>	
Design of Tool for Generating UML Analysis Class Diagram .....	621
<i>Faridah Hani Mohamed Salleh, Nazrita Ibrahim, and Loo Yim Ling</i>	
World-Wide Accessible LDPC Encoder/Decoder Generator Using Web-Based GUI and API .....	627
<i>Hiroataka Nosato, Yukari Ishida, Tatsumi Furuya, Eiichi Takahashi, Masahiro Murakawa, Isamu Kajitani, and Tetsuya Higuchi</i>	
Information Modeling for Rapid Prototyping in a Risk Management System .....	633
<i>Yong Bing Khoo, Mingwei Zhou, and Berman Kayis</i>	

## **Session: Scheduling Systems for Modelling, Control and Optimization**

LGR: The New Genetic Based Scheduler for Grid Computing Systems .....	639
<i>Leili Mohammad Khanli, Seyad Naser Razavi, and Nima Jafari Navimipour</i>	
Integrating Innate and Adaptive Immunity for Worm Detection .....	645
<i>Junmin Zhang and Yiwen Liang</i>	

Utility of Virtual Games and Time Allocation Behavior of Game Players: A Multi-extended Utility Framework .....	651
<i>Hui Peng and Lei Zhang</i>	
Grey Forecasting Model of Bridge-Health Condition .....	657
<i>Weizhen Chen, Binwen Wang, and Xiaoya Hu</i>	
An On-Line Calibration Monitoring Technique Using Support Vector Regression and Principal Component Analysis .....	663
<i>In-Yong Seo and Seong-Jun Kim</i>	

### **Session: Neural Networks and Advanced Control Strategies**

The Use of Neural Networks in the Prediction of the Stock Exchange of Thailand (SET) Index .....	670
<i>Suchira Chaigusin, Chaiyaporn Chirathamjaree, and Judy Clayden</i>	
Recurrent Expectation Maximization Neural Modeling .....	674
<i>Derrick Mirikitani and Nikolay Nikolaev</i>	
Deploying Neural-Network-Based Models for Dynamic Pricing in Supply Chain Management .....	680
<i>Yevgeniya Kovalchuk and Maria Fasli</i>	
A Neural Network for Water Level Prediction in Artesian Wells .....	686
<i>Corrado Mencar, Anna M. Fanelli, and Michele Chieco</i>	
Approximate Learning Algorithm for Restricted Boltzmann Machines .....	692
<i>Muneki Yasuda and Kazuyuki Tanaka</i>	

### **Session: Web Engineering and Web Services**

Evaluation of Web Applications According to Intelligence Parameters .....	698
<i>Alireza Tabatabaei Tabrizi and Mohsen Sadighi Moshkenani</i>	
Providing Customer-Centric Service: Customization and Composition of Service on the Semantic Web .....	703
<i>Garyfallos Fragidis, Lemonia Giantsiou, and Tarabanis Konstantinos</i>	
Guidelines to Determine Quality for Web-Based Software Applications .....	709
<i>Philip Lew, Li Zhang, Shouxin Wang, and Wei Jiang</i>	
Flow and Data Compatibility for the Correct Interaction between Web Processes .....	715
<i>María José Ibáñez, Pedro Álvarez, and Joaquín Ezpeleta</i>	

### **Session: Clustering, Classification and Learning Systems**

A Clustering Algorithm Incorporating Density and Direction .....	722
<i>Yu-Chen Song, M. J. O'Grady, G. M. P. O'Hare, and Wei Wang</i>	
Generating Heuristic Rule for Efficient Quay Assignment of Ships .....	726
<i>Insung Jung, Sungjoo Yeo, Gi-Nam Wang, Kwanhee Han, and Jihyung Lee</i>	
Multi-semantic Scene Classification Based on Region of Interest .....	732
<i>Junming Shao, Dongjian He, and Qinli Yang</i>	

## **Session: Optimization, Hybrid Systems, Genetic and Evolutionary Computation and Swarm Intelligence Applications**

A Penalty-Based Genetic Algorithm for QoS-Aware Web Service Composition with Inter-service Dependencies and Conflicts .....	738
<i>Lifeng Ai and Maolin Tang</i>	
Parameters Optimization in a Production Line Using Genetic Algorithms .....	744
<i>Claudio Bonivento, Andrea Paoli, and Matteo Sartini</i>	
Immune Algorithm in Non-stationary Optimization Task .....	750
<i>Ireneusz Gościński</i>	
Swarm Control Designs Applied to a Mechanical Oscillator .....	756
<i>Fábio Roberto Chavarette and Ivan Rizzo Guilherme</i>	

## **Session: Web Applications, Online Learning and ERP Systems**

A Quantitative Evaluation Approach of Subjective Trust for E-Commerce .....	761
<i>Shuai Wang, Li Zhang, and ShouXin Wang</i>	
A Distributed Platform for Mechanism Design .....	767
<i>Krzysztof R. Apt, Farhad Arbab, and Huiye Ma</i>	
A Novel Efficient Classification Algorithm for Search Engines .....	773
<i>Hanan Ahmed Hosni Mahmoud Abd Alla and Nadia Al-Ghreimil</i>	

## **Session: Genetic Algorithms and Evolutionary Computation**

Evolving Vector Quantization for Classification of On-Line Data Streams .....	779
<i>Edwin Lughofer</i>	
Combining Classifiers in a Tree Structure .....	785
<i>Tomasz Woloszynski and Marek Kurzynski</i>	
Evolutionary System of Equipment Acquisition Pertaining to a Hospital .....	791
<i>Genildo Santos, Andriene Maciel, Roberta Vieira, Evandro Costa, and Luis Coradine</i>	
Experiences-Based Intelligence Simulation in ECG Recognition .....	796
<i>Jun Dong and Jia-wei Zhang</i>	

## **Session: Monitoring, Prediction and Decision Making**

Towards a Ready-to-Use Drivers' Vigilance Monitoring System .....	802
<i>Rodolfo Ibarra-Orozco, Miguel González-Mendoza, Neil Hernández-Gress, Frederik Diederichs, and Juha Kortelainen</i>	
An Agent Architecture for Visualizing Simulated Human Behavior to Support the Assessment of Design Performance .....	808
<i>J. Dijkstra</i>	
A Production Sequencing Model for a Decision Support System .....	814
<i>Orides Morandin Jr., Edilson R. R. Kato, Flavio A. Montoro, and Veronica Oliveira de Carvalho</i>	

## **Session: Computational Intelligence for Modelling and Automation**

Fuzzy Estimation and Hierarchy of Future Regional Impact on Overall Heating .....	820
<i>Ovidiu Gherasim, Ioana Dornescu, and Georgiana Tacu</i>	
An Expert Fuzzy Grid Scheduler for Virtual Organizations .....	826
<i>A. J. Sánchez-Santiago, A. J. Yuste-Delgado, J. E. Muñoz-Expósito, S. García-Galán, J. M. Maqueira-Marín, and S. Bruque-Cámara</i>	
Implementation of Fuzzy Control for Surface Platforms in a Computer Generated Forces Toolkit .....	832
<i>Levent Senyurek, Seniha Koksak, Hakki Murat Genc, Deniz Aldogan, and Mehmet Haklidir</i>	

## **Session: Knowledge Acquisition and Classification**

Duration Models for Arabic Text Recognition Using Hidden Markov Models .....	838
<i>Fouad Slimane, Rolf Ingold, Adel M. Alimi, and Jean Hennebert</i>	
Overlap and Add Sinusoidal Synthesis Method of Speech Signal Using Amplitude-Weighted Phase Error Function and Damping Harmonic Amplitude Parameter .....	844
<i>Jong-Bae Park and In-Sung Lee</i>	
Semantic Classifier for Affective Computing .....	849
<i>Mladen Stanojević and Sanja Vraneš</i>	
Exploring the Use of Local Binary Patterns as Focus Measure .....	855
<i>J. Lorenzo, M. Castrillón, J. Méndez, and O. Déniz</i>	
The Design of an Open Hybrid Recommendation System for Mobile Commerce .....	861
<i>Chengzhi Liu, Caihong Sun, and Jia Yu</i>	

## **Session: Intelligent Systems, Sensor Networks and Knowledge Discovery**

A Survey of Simulation in Sensor Networks .....	867
<i>Chandresh Pratap Singh, O. P. Vyas, and Manoj Ku Tiwari</i>	
An Overview of Routing Protocols of Sensor Networks .....	873
<i>Chandresh Pratap Singh, O. P. Vyas, and Manoj Ku Tiwari</i>	
Computation on Attribute Importance of Classification Based on Cloud Model .....	879
<i>Hesong Li, Guangwei Zhang, Deyi Li, and Xiangmei Li</i>	
Semantic Web Service Discovery and Integration Using Service Search Crawler .....	884
<i>Viriya Kaewmarin, Ngamnij Arch-int, and Somjit Arch-int</i>	
Escalation Management for the Monitoring of Critical Process and Project Activities .....	889
<i>Stefan Winkler, Holger Sonnberger, and Freimut Bodendorf</i>	

## **Session: Intelligent Agent Systems**

Combining a JADE-Agent-Based Grid Infrastructure with the Globus Middleware—Initial Solution .....	895
<i>Mehrdad Senobari, Michal Drozdowicz, Marcin Paprzycki, Wojciech Kuranowski, Maria Ganzha, Richard Olejnik, and Ivan Lirkov</i>	
Affect-as-Information Approach to a Sentiment Analysis Based Evaluation of Conversational Agents .....	901
<i>Michal Ptaszynski, Pawel Dybala, Shinsuke Higuchi, Rafal Rzepka, and Kenji Araki</i>	
A Fuzzy Bidding Strategy in Automated Auctions Using Agent's Perspective .....	907
<i>Jun Ma and Madhu Lata Goyal</i>	
Extending Prometheus with Agent Cooperation .....	912
<i>Ebrahim AlHashel, Bala M. Balachandran, and Dharmendra Sharma</i>	
Enabling Virtual Markets on an Economically Scalable Multi-agent Platform .....	919
<i>Li Guo and Thierry Rayna</i>	
Collective Operations as Building Blocks for Agent Cooperation .....	925
<i>Nguyen Tuan Duc and Ikuo Takeuchi</i>	

## **Session: Simulation and Control**

Consensus Forming in Clinical Pathway Development: Norm Based Modeling and Simulation .....	931
<i>Yunchuan Zhang, Kecheng Liu, and Guoxi Cui</i>	
Integration and Application of Geographic Information System (GIS) and Spatial Analysis Model--A Case Study of Simulation for Soil Environment .....	937
<i>Junhua Zhang and Guodong Li</i>	

## **Session: Innovative Applications of Fuzzy Logic Systems**

Prediction of Scattered Field from Linearly Loaded Dipole Antenna Using Fuzzy Inference .....	941
<i>S. R. Ostadzadeh, M. Tayarani, and M. Soleimani</i>	
Automatic Generation of Hybrid Fuzzy/Numerical Controllers .....	946
<i>Daniele Magazzeni</i>	
A Transition to Chaos in Rucklidge Model of Double Convection .....	952
<i>Andrey A. Trebler</i>	
Fuzzy Models in Decision-Making .....	958
<i>Ovidiu Gherasim</i>	

## **Session: Collaborative Systems, Mobile Network Applications and Sensor Databases**

Dynamic Management of the Work Environment for Facilitation of Data Sharing .....	963
<i>Oleg Tilchin</i>	
An Efficient Algorithm to Detect Faulty Reading in Wireless Sensor Network Using the Concept of Reputation .....	969
<i>Zahra Taghikhaki and Mohsen Sharifi</i>	
Survivability Analysis of Wireless Sensor Network with Transient Faults .....	975
<i>Alireza Masoum, AmirHossein Jahangir, and Zahra Taghikhaki</i>	

## **Session: Innovative Control Techniques and Automation**

Solving a Ring Star Problem Generalization .....	981
<i>Antonio Mauttone, Sergio Nesmachnow, Alfredo Olivera, and Franco Robledo Amoza</i>	
A Cost Efficient Design for an Autonomous Underwater Vehicle Capable of Localizing and Navigating within a Bounded Body of Water .....	987
<i>Hassan Majeed, Nasir Ahsan, Hassan Nazir Raja, Rohaan Ahmed Mumtaz, Syed Baqar Hussain, and Uzair Saeed</i>	
Data-Driven PD Gimbal Control .....	993
<i>Kazuo Kawada, Taki Shiino, Toru Yamamoto, Manabu Komichi, and Takafumi Nishioka</i>	
A Clustering Based Denoising Technique for Range Images of Time of Flight Cameras .....	999
<i>H. Schöner, B. Moser, A. A. Dorrington, A. D. Payne, M. J. Cree, B. Heise, and F. Bauer</i>	

## **Session: Clustering and Data Mining for Information Retrieval**

On Human-Machine Interaction during Online Image Classifier Training .....	1005
<i>Edwin Lughofer, Jim Smith, Praminda Caleb-Solly, Muhammad Atif Tahir, Christian Eitzinger, Davy Sannen, and Hendrik Van Brussel</i>	
Attributes Extraction from a Chinese Machine-Readable Dictionary Utilizing Hyponyms .....	1011
<i>Lei Liu, Maosheng Zhong, Hui Liu, and Ruzhan Lu</i>	
Comparison of Image Interpolation Methods Applied to Least Squares Matching .....	1017
<i>Ryuji Matsuoka, Mitsuo Sone, Noboru Sudo, and Hideyo Yokotsuka</i>	

## **Session: Bayesian Systems, Learning and Classification**

Learning the Structure of Bayesian Networks Representing Influence Relations among Genes .....	1023
<i>Massimiliano Mascherini</i>	
Tree Exploration for Bayesian RL Exploration .....	1029
<i>Christos Dimitrakakis</i>	

Reputation System User Classification Using a Hausdorff-Based Metric .....	1035
<i>Lenuta Alboaie and Tudor Barbu</i>	
A Collaborative Mobile Learning Environmental Education System for Students .....	1041
<i>N. Cavus and H. Uzunboylu</i>	
Portlets-Based Portal for an E-learning Grid .....	1047
<i>Felicia Ionescu, Elena Cristina Stoica, Mircea Deaconu, and Alexandru David</i>	

### **Session: Image Processing and Vision**

Hybrid Image Processing Technique for the Robust Identification of Unstained Cells in Bright-Field Microscope Images .....	1053
<i>G. Lupica, N. M. Allinson, and S. W. Botchway</i>	
Comparison of Two Methods for Automatic Segmentation of Brain MRI Based on 2D Seed Growth and Two Stage FCM Algorithm .....	1059
<i>K. J. Shanathi, M. Sasi Kumar, and C. Keshavdas</i>	
A New NPR Approach for Image Stylization: Combining Edges, Color Reduction and Facial Exaggerations .....	1065
<i>F. A. P. V. Arruda, V. A. Porto, J. B. O. Alencar Jr., H. M. Gomes, J. E. R. Queiroz, and N. Moroney</i>	

### **Session: Application of Neural Networks and Evolutionary Algorithms**

Detection and Classification of Surface Defects of Cold Rolling Mill Steel Using Morphology and Neural Network .....	1071
<i>Mohammad Reza Yazdchi, Arash Golibagh Mahyari, and Ali Nazeri</i>	
A Neural Model for Unsupervised Named Entity Classification .....	1077
<i>Emil St. Chifu and Viorica R. Chifu</i>	
On Comparative Evaluation of Thorndike's Psycho-Learning Experimental Work Versus an Optimal Swarm Intelligent System .....	1083
<i>Hassan M. Hassan and Ayoub Al-Hamadi</i>	
A New Route Selection System: Multiparameter Ant Algorithm Based Vehicle Navigation Approach .....	1089
<i>Hojjat Salehinejad, Farhad Pouladi, and Siamak Talebi</i>	

### **Session: Software Engineering, Systems Analysis and Design**

Construction and Implementation of Spatial Analysis Model Based on Geographic Information System (GIS)--A Case Study of Simulation for Urban Thermal Field .....	1095
<i>Guodong Li, Junhua Zhang, and Naiang Wang</i>	
Towards Requirements Engineering in a Service-Oriented Environment--Extending the SOA Interaction Triangle .....	1099
<i>Matthias Galster and Eva Bucherer</i>	



Mining Bug Repositories--A Quality Assessment .....	1105
<i>Philipp Schugerl, Juergen Rilling, and Philippe Charland</i>	
Information Systems Security Risk Assessment: Harmonization with International Accounting Standards .....	1111
<i>Adrian Munteanu, Doina Fotache, and Octavian Dospinescu</i>	
<b>Session: Advanced Image Processing Techniques</b>	
Offline Machine-Print Hindi Digit Recognition Using Translational Motion Estimation .....	1118
<i>Hussein Al-Zoubi and Mahmood Al-Khassaweneh</i>	
Comparison, Segmentation and Analysis of Images by Use of Information Compression Algorithms .....	1123
<i>Gancho Vachkov</i>	
Robust Object Detection Based on Decision Trees and a New Cascade Architecture .....	1129
<i>Zhiquan Qi , Laisheng Wang, Yitian Xu, and Ping Zhong</i>	
<b>Session: Innovation in Software Engineering System Analysis</b>	
Risk Management Method Using Data from EVM in Software Development Projects .....	1135
<i>Akihiro Hayashi and Nobuhiro Kataoka</i>	
The Analysis of Arbitrage Capital Flows between Online Virtual Game and Real Economy Based on Risk Premium .....	1141
<i>Hui Peng and Xiaobing Xu</i>	
2-D Software Quality Model and Case Study in Software Flexibility Research .....	1147
<i>Li Zhang, Lin Li, and Hui Gao</i>	
A Method to Identify Critical Software Process Improvement Area Using Quality Function Deployment .....	1153
<i>Akihiro Hayashi and Nobuhiro Kataoka</i>	
An Explanation Model for Quality Improvement Effect of Peer Reviews .....	1159
<i>Mutsumi Komuro and Norihisa Komoda</i>	
<b>Session: Knowledge Discovery and Classification</b>	
A Multi-agent Architecture and System for Dynamic Medical Knowledge Acquisition .....	1165
<i>Ana Aguilera and Alberto Subero</i>	
Discovering Web Pages Censored by Search Engines in Japan .....	1171
<i>Takanori Moroi and Noriaki Yoshiura</i>	
Game Player Strategy Pattern Recognition and How UCT Algorithms Apply Pre-knowledge of Player's Strategy to Improve Opponent AI .....	1177
<i>Suoju He, Yi Wang, Fan Xie, Jin Meng, Hongtao Chen, Sai Luo, Zhiqing Liu, and Qiliang Zhu</i>	

## **Session: Advances in Fuzzy Logic Systems and Intelligent Control**

Fuzzy Number in Determining the Optimal Solution of Multiple Input Multiple Output (MIMO) System .....	1182
<i>Normah Maan and Tahir Ahmad</i>	
On Updating the Shortest Path in Fuzzy Graphs .....	1188
<i>Peyman Behzadnia, Soroush M. Mirzaei Zarandi, Reza Berangi, and Amir Baniamerian</i>	
Generation of PLC Ladder Diagram Using Modular Structure .....	1194
<i>Mulman Budha, Devinder Thapa, S. C. Park, and Gi-Nam Wang</i>	
Novel Cardiac Risk Factor Stratification Using Neuro-fuzzy Tool .....	1199
<i>Elahe Yargholi and Saman Parvaneh</i>	
A New Approach for Interactive Image Retrieval Based on Fuzzy Feedback and Support Vector Machine .....	1205
<i>Malihe Javidi, Baharak Shakeri Aski, Hale Homaei, and H. R. Pourreza</i>	
The Optimal Rule Structure for Fuzzy Systems in Function Approximation by Hybrid Approach in Learning Process .....	1211
<i>Thi Nguyen, Lee Gordon-Brown, and Jim Peterson</i>	

## **Session: Filtering, Image Processing and Web Applications**

Scale-Invariant Feature Extraction by VQ-Based Local Image Descriptor .....	1217
<i>Qiu Chen, Koji Kotani, Feifei Lee, and Tadahiro Ohmi</i>	
Fast Search Algorithm for Short Video Clips from Large Video Database Using a Novel Histogram Feature .....	1223
<i>Feifei Lee, Koji Kotani, Qiu Chen, and Tadahiro Ohmi</i>	
Information Visualization: Which Is the Most Appropriate Technique to Represent Data Mining Results? .....	1228
<i>Emerson Rabelo, Maria Dias, Clélia Franco, and Roberto C. S. Pacheco</i>	

## **Session: Innovation in Software Engineering**

Reviews in Innovative Software Development--The Gauntlet Game .....	1234
<i>Ivan Aaen, Jeppe Vestergaard Boelsmand, Rasmus Jensen, and Morten Saxov</i>	
A Business Model to Make Software Development Less Intuitive .....	1240
<i>Janis Osis and Erika Asnina</i>	
Usability-Focused Architectural Design for Graphical User Interface Components .....	1246
<i>Stephan Bode and Matthias Riebisch</i>	
From Models to Components: Filling the Gap with SDL Macro-patterns .....	1252
<i>Anna Medve and Ileana Ober</i>	

## **Session: E-learning, Collaborative Systems and Recommender Systems**

On Line Instruction Challenge: Ariann@ Project Example .....	1258
<i>Vincenzo Di Lecce, Antonella Giove, and Alessandro Quarto</i>	
Adaption of Courses and Learning Environment to the User Context in dotLRN .....	1264
<i>David Huerva, Jeimy Vélez, Silvia Baldiris, Ramón Fabregat, and David Mérida</i>	
Mining Multi-modal Crime Patterns at Different Levels of Granularity Using Hierarchical Clustering .....	1268
<i>Yee Ling Boo and Dammindia Alahakoon</i>	
Computability, Learnability and Breakability in Cryptanalysis .....	1274
<i>Song Y. Yan</i>	
A LDCT Image Contrast Enhancement Algorithm Based on Single-Scale Retinex Theory .....	1282
<i>Guodong Zhang, Donghong Sun, Peiyu Yan, Hong Zhao, and Zhezhu Li</i>	
Classification of Data Based on a Fuzzy Logic System .....	1288
<i>Masoud Mohammadian</i>	

## **Session: Short Paper - RFID Application**

RFID Technology and Crowded Event Management .....	1293
<i>Mohammad Yamin, Masoud Mohammadian, Xu Huang, and Dharmendra Sharma</i>	

## **Author Index**