

2010 International Conference on Intelligent Systems, Modelling and Simulation

(ISMS 2010)

**Liverpool, United Kingdom
27 – 29 January 2010**



IEEE Catalog Number: CFP1025J-PRT
ISBN: 978-1-4244-5984-1

2010 International Conference on Intelligent Systems, Modelling and Simulation

ISMS 2010

Table of Contents

Welcome Message from the Chairs.....	xii
Conference Organization.....	xiv
International/Technical Program Committee.....	xv
International Reviewers.....	xvi
Technical Sponsors.....	xviii
Plenary Abstract 1.....	xix
Plenary Abstract 2.....	xxii
Plenary Abstract 3.....	xxiv

A. Intelligent Systems

Intrusion Detection by New Data Description Method	1
<i>Mohammad GhasemiGol, Reza Monsefi, and Hadi Sadoghi Yazdi</i>	
Beck Depression Inventory Test Assessment Using Fuzzy Inference System	6
<i>Retno Dina Ariyanti, Sri Kusumadewi, and Irving Vitra Paputungan</i>	
A New Support Vector Data Description with Fuzzy Constraints	10
<i>Mohammad GhasemiGol, Mostafa Sabzekar, Reza Monsefi, Mahmoud Naghibzadeh, and Hadi Sadoghi Yazdi</i>	
Selecting Informative Genes from Microarray Data by Using a Cyclic GA-Based Method	15
<i>Mohd Saberi Mohamad, Sigeru Omatsu, Safaai Deris, and Michifumi Yoshioka</i>	
The Use of Location Based Services for Very Fast and Precise Accidents' Reporting and Locating	21
<i>Faisal Alkhateeb, Eslam Al Maghayreh, Mohammad Tubishat, and Shadi Aljawarneh</i>	
An Intelligent Classification Model for Rubber Seed Clones Based on Shape Features through Imaging Techniques	25
<i>Hadzli Hashim, Fairul Nazmie Osman, Syed Abdul Mutalib Al Junid, Muhammad Adib Haron, and Hajar Mohd Salleh</i>	

Sequential Modeling of D_st Dynamics with SEEk Trained Recurrent Neural Networks	32
<i>Lahcen Ouarbya and Derrick Takeshi Mirikitani</i>	
Intelligent Agent System Architecture for Presenting Health Grid Contents from Complex Database	38
<i>Al-Sammaraie Hosam, Merza Abbas, Shakeel Ahmad, and Adli Mustafa</i>	
Solving Ceramic Grinding Optimization Problem by Adaptive Quantum Evolutionary Algorithm	43
<i>Ashish Mani and C. Patvardhan</i>	
Recognition of Ingredients and Recipes of Cookery Shows for Value Added Service (VAS) of an Interactive Set Top Box (iSTB)	49
<i>T. Chattopadhyay and Ayan Chaki</i>	
Automated Method for Reducing False Positives	54
<i>Joshua Ojo Nehinbe</i>	
The Development of an Advanced Autonomous Integrated Mission System for Uninhabited Air Systems to Meet UK Airspace Requirements	60
<i>Charles Patchett and Darren Ansell</i>	
Preliminary Study on Gesture Recognition for Walking-Stick Interface	65
<i>Terauki Ito</i>	
Attribute-Based Authorization for Grid Computing	71
<i>Husam Khider, Taha Osman, and Nasser Sherkat</i>	
A Multi Agent-Based System for Securing University Campus: Design and Architecture	75
<i>Faisal Alkhateeb, Eslam Al Maghayreh, and Shadi Aljawarneh</i>	
Invited Paper: Profiling Intelligent Systems Applications in Fraud Detection and Prevention: Survey of Research Articles	80
<i>Mirjana Pejic-Bach</i>	
Artificial Neural Network Model for Spectral Construction of a Linear Accelerator Megavoltage Photon Beam	86
<i>Sabir Hussain</i>	

B. Hybrid Intelligent Systems & Hybrid Soft Computing

An Exploration Technique for the Interacted Multiple Ant Colonies Optimization Framework	92
<i>Alaa Aljanaby, Ku Ruhana Ku-Mahamud, and Norita Md. Norwawi</i>	
Training Feed-Forward Neural Networks Using a Parallel Genetic Algorithm with the Best Must Survive Strategy	96
<i>Ali R. Mustafa Kattan, Rosni Abdullah, and Rosalina Abdul Salam</i>	
A Geo-referenced Swarm Agents Enabling System: Theory and Demo Application	100
<i>S. Barbera, C. Stallo, G. Savarese, M. Ruggieri, S. Cacucci, and F. Fedi</i>	
Harmony Search Based Supervised Training of Artificial Neural Networks	105
<i>Ali Kattan, Rosni Abdullah, and Rosalina Abdul Salam</i>	

Application of Feed-Forward Neural Network and MMI-Supervised Vector Quantizer to the Task of Content Based Audio Segmentation by Co-operative Unmanned Flying Robots	111
<i>Ladislava Smíková Janků and Kateřina Hyniová</i>	

C. Methodologies, Tools and Operations Research

Usage of Embedded Process Functional Language as a Modeling Tool for Embedded Systems Development	116
<i>Marek Běhálek and Petr Šaloun</i>	
CODESL: A Framework for System-Level Modelling, Co-simulation and Design-Space Exploration of Embedded Systems Based on System-on-Chip	122
<i>Y. W. Hau, Mohamed Khalil-Hani, and M. N. Marsono</i>	
Randomness Modeling in Supply Chain Simulation	128
<i>Galina Merkuryeva and Olesya Vecherinska</i>	
Simulation-Based Vehicle Scheduling with Time Windows	134
<i>Galina Merkuryeva and Vitalijs Bolshakovs</i>	
Automated Average Cycle Length Detection in Chaotic Time Series	140
<i>Cristina Maria Ștefanache, Gheorghe Cosmin Silaghi, and Cristian Marius Litan</i>	
Usability Evaluation of Web Office Applications in Collaborative Writing	146
<i>Muhammad Afsar Khan, Nauman Israr, and Sher Hassan</i>	
Strategies for Improving MDA-Based Development Processes	152
<i>Mehdi Fahmideh Gholami and Raman Ramsin</i>	

D. Bio-informatics and Bio-Medical Simulation

A Three-Stage Method to Select Informative Genes from Gene Expression Data in Classifying Cancer Classes	158
<i>Mohd Saberi Mohamad, Sigeru Omatsu, Safaai Deris, and Michifumi Yoshioka</i>	
Simulation of the GPTAD Applied to the Removal of Blood Clots That Arise during Peripheral Vascular Disease	164
<i>G. Romero, I. Higuera, M. L. Martinez, G. Pearce, and N. D. Perkins</i>	
Correlation-Based Network Inference and Modelling in Systems Biology: The NF-kappa B Signalling Network Case Study	170
<i>Paola Lecca, Alida Palmisano, and Adaoha E. C. Ihekweaba</i>	

E. Discrete Event and Real Time Systems

Discrete Event Simulation of Embedded Systems from Graphical Notations	176
<i>Fateh Boutekkouk and Mohamed Benmohammed</i>	
Multi-view Communication Visualization for Wireless Network Simulations	181
<i>Peter Janacik, Johannes Lessmann, and Michael Karch</i>	

F. Image, Speech and Signal Processing

Compression Algorithms for Audio-Video Streaming	187
<i>Tarif Riyad Rahman and Miftahur Rahman</i>	
A Fast Affine Projection Algorithm Based on Matching Pursuit in Adaptive	
Noise Cancellation for Speech Enhancement	193
<i>N. Sonbolestan and S. A. Hadei</i>	
Comparative Study of Neural Networks for Image Retrieval	199
<i>B. Veera Jyothi and Kumar Eswaran</i>	
Implementation of DSP Techniques to Estimate Distances Covered by	
an Automobile Using PIC18F452 from Acceleration Signal Output	
of MMA7260QT Accelerometer	204
<i>Taha Ali, Shahid Nasim, Junaid Ali, and Naveed Ahmed</i>	
On the Use of Decision Tree for Posture Recognition	209
<i>Nooritawati Md Tahir, Aini Hussain, Salina Abdul Samad, and Hafizah Hussin</i>	

G. Industry, Business and Management

A Two Phase Clustering Method for Intelligent Customer Segmentation	215
<i>Morteza Namvar, Mohammad R. Gholamian, and Sahand KhakAbi</i>	
Data Mining Applications in Customer Churn Management	220
<i>Sahand KhakAbi, Mohammad R. Gholamian, and Morteza Namvar</i>	
Security Standards Perspective to Fortify Web Database Applications	
from Code Injection Attacks	226
<i>Sushila Madan and Supriya Madan</i>	

H. Human Factors, Social & Economic Sciences

Estimation of Car Demand in Iranian Market: Using Discrete Choice Model	231
<i>Hamid Saeedi, Mohsen Fattahi Ardakani, and Mohammad Javad Shahbazi</i>	

J. Engineering: Civil, Mechanical, Chemical, Industrial, Manufacturing and Control

Nonparametric Driveline Identification and Control	238
<i>A. Abass, S. Zhao, and A. T. Shenton</i>	
Automotive Driveline Modelling, Inverse-Simulation and Compensation	244
<i>A. Abass and A. T. Shenton</i>	
Smart Distance Keeping: Modeling and Perspectives for Embedded Diagnosis	250
<i>Hassan Shraim, Othman Nasri, Philippe Dague, Olivier Heron, and Mickael Cartron</i>	
Technical Challenges in Network-Centric Control and Communication	
Systems	256
<i>Vasilis N. Tsoukas, Leonidas Dritsas, and Athanasios A. Pantelous</i>	
Robust Performance Issues in Tracking Control over Networks	264
<i>Leonidas Dritsas, Vasilis N. Tsoukas, Athanasios A. Pantelous, and Antony Tzes</i>	

Robust Control of a Closed-Loop Identified System with Parametric/Model Uncertainties and External Disturbances	270
---	-----

*R. Doraiswami, Lahouari Cheded, Haris M. Khalid, Qadeer Ahmed,
and Amar Khoukhi*

A Time-Varying System Control Using Implicit Flatness: Case of an Inverted Pendulum	276
---	-----

Chafik Maghzaoui, Ali Mansour, and Houssem Jerbi

K. Energy, Power Generation and Distribution

Energy Efficient Lighting System Design for Building	282
--	-----

*Wan Norsyafizan W. Muhamad, Mohamad Yusof Mat Zain, Norfishah Wahab,
Noor Hafizah Abdul Aziz, and Rosmalini Abd Kadir*

An Energy Efficient Cluster-Head Selection for Wireless Sensor Networks	287
---	-----

Ma Chaw Mon Thein and Thandar Thein

Load Flow Simulation of Western Grid of Bangladesh Power System Using PSAT and Performance-Based Comparison with PowerWorld	292
---	-----

Shibani Ghosh, Avijit Saha, and Nurunnahar Islam Mou

L. Transport, Logistics, Harbour, Shipping and Marine Simulation

Analysis of Time and Distance Delays in Car Following Models	296
--	-----

Valeriy Naumov

N. Parallel and Distributed Architectures and Systems

A Fast Simulation for Thousands of General Homogeneous Fork/Join Queues	300
---	-----

Ray Jinzhu Chen, Haiying Zhang, and Hailong Hu

Offloading Region Matching of Data Distribution Management with CUDA	306
--	-----

Shih Hsiang Lo, Yeh Ching Chung, and Fang Ping Pai

Quantifying Distributed System Stability through Simulation: A Case Study of an Agent-Based System for Flow Reconstruction of DDoS Attacks	312
--	-----

Omer Demir and Bilal Khan

AGC4ISR, New Software Architecture for Autonomic Grid Computing	318
---	-----

Mehdi Bahrami, Ahmad Faraahi, and Amir Masoud Rahmani

Applying Rules as Policies for Large-Scale Data Sharing	322
---	-----

Arcot Rajasekar, Reagan Moore, Mike Wan, Wayne Schroeder, and Adil Hasan

P. Internet Modelling, Semantic Web and Ontologies

Simulations of Some Physical Phenomena Using the Numerical Calculations	328
---	-----

Eliza Consuela Isbasoiu

R. Mobile/Ad Hoc Wireless Networks, Mobicast, Sensor Placement, Target Tracking

Cross Layer Scheduling Scheme for Dense Wireless Sensor Networks	334
<i>Nauman Israr</i>	
Real Time Monitoring Critical Parameters in Tissue Culture Growth Room with SMS Alert System	339
<i>Noor Hafizah Abdul Aziz, Wan Norsyafizan W. Muhamad, Norfishah Abdul Wahab, Ahmad Jais Alias, Ahmad Tarmizi Hashim, and Rozita Mustafa</i>	
Bees_Ants Based Routing Algorithm	344
<i>Eslam Al Maghayreh, Salam Abu Al-Haija, Faisal Alkhateeb, and Shadi Aljawarneh</i>	
Call Admission Control Mechanism for Optimal QoS in Next Generation Wireless Networks	350
<i>Ramesh Babu H. S., Gowrishankar, and Satyanarayana P. S.</i>	
Log Analyzer for Network Forensics and Incident Reporting	356
<i>Joshua Ojo Nehinbe</i>	
Automated Technique for Debugging Network Intrusion Detection Systems	362
<i>Joshua Ojo Nehinbe</i>	
Radio Channel Characterization for IEEE 802.11	368
<i>Deepak C. Karia, B. K. Lande, and R. D. Daruwala</i>	

S. Performance Engineering of Computer & Communication Systems

Hardware Acceleration of OpenSSL Cryptographic Functions for High-Performance Internet Security	374
<i>Mohamed Khalil-Hani, Vishnu P. Nambiar, and M. N. Marsono</i>	
An Approximate Actual Network Performance Evaluation Method	380
<i>Jozef B. Lewoc, Antoni Izworski, Sławomir Skowronski, Georgi Marko Dimirovski, and Vesna Ojleska</i>	
Synthesizing Clustered, Secured, and Hierarchical Networks through Genetic Algorithms	385
<i>Shouq Al-Subaihi, Lulwa Al-Hubail, Paulvanna Nayaki Marimuthu, and Sami J. Habib</i>	
A Novel Method for Supporting Locality in Peer-to-Peer Overlays Using Hypercube Topology	391
<i>Mohammed Gharib, Zeynab Barzegar, and Jafar Habibi</i>	

T. Circuits, Sensors and Devices

Modelling of NPN Bipolar Junction Transistor Characteristics Using Gummel Plot Technique	396
<i>Zoolfakar A. S. and Shahrol N. A.</i>	
Graphene Nanoribbon Fermi Energy Model in Parabolic Band Structure	401
<i>Mohammad Taghi Ahmadi and Razali Ismail</i>	

A 2.4GHz 1.8-V CMOS Sub-harmonic Mixer with Inherent Harmonic-Rejection	406
<i>Mitra Gilasgar</i>	
New Advances on Modelling Control Processes Applied to Detection Trains Operations	412
<i>JD. Sanz-Bobi, G. Romero, J. Felez, and R. Galan</i>	
A Low Power 2.4GHz Double-Balanced CMOS Sub-harmonic Mixer	418
<i>Mitra Gilasgar</i>	
Electric Field and Ultrasonic Sensor Based Security System	423
<i>Rohit Sharma, Karandeep Singh Dhingra, Nikhil Pandey, Rahul Garg, and Rohit Singhal</i>	
U. e-Science and e-Systems	
Security Mechanisms in Network Protocols	427
<i>Marcin Kołodziejczyk and Marek R. Ogiela</i>	
A Quantitative Model of Grid Systems Performance in Healthcare Organisations	431
<i>Saleh Altowaijri, Rashid Mehmood, and John Williams</i>	
Context-Aware Pervasive Service Composition	437
<i>Jiehan Zhou and Jukka Riekki</i>	
The Evolution of E-Business Environment in Fashion Sector	443
<i>Christiana Arvaniti</i>	
Author Index	451