

2011 Second International Conference on Intelligent Systems, Modelling and Simulation

(ISMS 2011)

**Phnom Penh, Cambodia
25 – 27 January 2011**



**IEEE Catalog Number: CFP1125J-PRT
ISBN: 978-1-4244-9809-3**

2011 Second International Conference on Intelligent Systems, Modelling and Simulation

ISMS 2011

Table of Contents

Welcome Message from the Chairs	xiii
Conference Organization	xv
International/Technical Program Committee	xvi
International Reviewers	xvii
Technical Sponsors	xix
Keynotes	xx
Tutorial	xxv

A. Intelligent Systems

Solution to the Tic-Tac-Toe Problem Using Hamming Distance Approach in a Neural Network	3
<i>Nazneen Fatema Rajani, Gaurav Dar, Rajoshi Biswas, and C. K. Ramesha</i>	
Comparative Study of Mutation Operators on the Behavior of Genetic Algorithms Applied to Non-deterministic Polynomial (NP) Problems	7
<i>Basima Hani Hasan and Moutaz Saleh Mustafa</i>	
Assessment of Cognitive Level for Alzheimer's Using Neural Networks	13
<i>Srivaramangai Ramanujam, Nilendu Purohit, and Nainish Bhoir</i>	
Implementation of In-vehicle Multi-sensor Information Fusion Gateway for Cooperative Driving	19
<i>Ting-Ying Wei, Zhi-Liang Qiu, Chung-Ping Young, and Yu-Tsung Lo</i>	
Stereo Vision Based Pedestrians Detection and Distance Measurement for Automotive Application	25
<i>Brojeshwar Bhowmick, Sambit Bhadra, and Arijit Sinharay</i>	
Efficient Decision Support with Simulation-Based System BPsim.DSS: Advanced Simulation Techniques	30
<i>Konstantin A. Aksyonov, Eugene A. Bykov, Elena F. Smolij, Ekaterina M. Sufrygina, Alexey Sheklein, Olga P. Aksyonova, and Wang Kai</i>	

Averaged Segmental Partial Hausdorff Distance for Robust Face Recognition	35
<i>Hamidreza Dastmalchi, Javad Jafaryahya, Reza Najafi, and Ali Daneshkhah</i>	
Enhancing MAC Security Model with Meta-policy Approach Using an Intelligent Anomaly Based HIDS	40
<i>Zeinab Shahbazi, Reza Azmi, and Mohammad Mahmoudi</i>	
Improved Simulated Annealing Using Momentum Terms	44
<i>Mohammad Mehdi Keikha</i>	
GA-Neural Approach for Latent Finger Print Matching	49
<i>Shahrzad Shapoori and Nigel Allinson</i>	

B. Hybrid Intelligent Systems & Hybrid Soft Computing

Multi-level Fuzzy Association Rules Mining via Determining Minimum Supports and Membership Functions	55
<i>Ehsan Vejdani Mahmoudi, Elahe Sabetnia, Masood Niazi Torshiz, Mehrdad Jalali, and Ghamarnaz Tadayon Tabrizi</i>	
Method for Verification of a Multi Agents System	62
<i>Borhen Marzougui, Khaled Hassine, and Kamel Barkaoui</i>	
Potter Model - A Change Compliant Software Development Lifecycle Model	66
<i>Varun Mittal and Charu Chopra</i>	
A New Method for Scheduling Load Balancing in Multi-processor Systems Based on PSO	71
<i>OmidReza Kiyarazm, M-Hossein Moeinzadeh, and Sarah Sharifian-R</i>	
Automated Translation Machines: Challenges and a Proposed Solution	77
<i>Shaidah Jusoh and Hejab M. Alfawareh</i>	
Application of Imperialist Competitive Algorithm in Online PI Controller	83
<i>Mohammad Ahmadi Movahed and Amir Mehdi Yazdani</i>	

C. Methodologies, Tools and Operations Research

Integrating Geo-spatial Information Infrastructure into Conservation and Management of Wetlands in Ghana	91
<i>W. Owusu-Banahene, I. K. Nti, and P. J. Sallis</i>	
NSSA: A New Enterprise Architecture for Network Setup without Any Network Infrastructure	95
<i>Mehdi Bahrami, Marziyeh Shahrazadfard, and Tooba Kerdkar</i>	
Qualified Analysis b/w ESB(s) Using Analytical Hierarchy Process (AHP) Method	100
<i>Zeeshan Siddiqui, Abdul Hanan Abdullah, and Muhammad Khurram Khan</i>	

D. Bio-informatics and Bio-medical Simulation

B-MIPT: A Case Tool for Biomedical Image Processing and Their Classification Using Nearest Neighbor and Genetic Algorithm	107
<i>Pardeep Kumar Naik, Nitin, Aujasvita Janmeja, Sushain Puri, Kunal Chawla, Manav Bhasin, and Kunal Jain</i>	
Design and Development of Fuzzy Expert System for Diagnosis of Hypertension	113
<i>Azian Azamimi Abdullah, Zulkarnay Zakaria, and Nur Farahiyah Mohamad</i>	
A New Paradigm of Electronic Health Record for Efficient Implementation of Health Care Delivery	118
<i>Praveen Kumar Kannoju, K. V. Sridhar, and K. S. R. Prasad</i>	
A Time and Space Efficient Algorithm for Alignment and Visualization of Sparse Retro-elements over Whole Genome Scale	121
<i>Sun-Young Park, SeonYeong Kim, Dong-Sung Ryu, and Hwan-Gue Cho</i>	
Epitope Screening and Cell Cooperation in the Immune Response	127
<i>F. Castiglione and M. Bernaschi</i>	
Design and Implementation of a Novel Approach to Implement Telemedicine in Rural India Using Advancements Made in Communications and Information Technology	133
<i>Praveen Kumar Kannoju, K. V. Sridhar, and K. S. R. Prasad</i>	
Probabilistic Neural Network for Brain Tumor Classification	136
<i>Mohd Fauzi Othman and Mohd Ariffanan Mohd Basri</i>	
A Secure Multiparty Computation Solution to Healthcare Frauds and Abuses	139
<i>Priyanka Jangde and Durgesh Kumar Mishra</i>	
Swimming Motion Control for Biometric Fish Robot by Utilizing Turning Coefficient	143
<i>Yoong Hou Pin, Lin Boon Hoe, Kenneth Teo Tze Kin, and Ismail Saad</i>	

E. Discrete Event and Real Time Systems

EMD: Electricity Monitoring Device for User Awareness	151
<i>S. S .S. Ranjit, S. E. Loo, and S. Zulkifli</i>	

F. Image, Speech and Signal Processing

Frequency Based Rearranged Chain Code	157
<i>Youngeun An, Jinim Lee, Jonghun Chun, and Jongan Park</i>	
A Novel Algorithm for Peak Identification in Semi-periodic Signals	161
<i>Salem A. Al-Otaibi and Lahouari Cheded</i>	

2D Simulator of Obstacle Avoidance Using LRF for Mobile Robots Participated in Tsukuba Challenge	166
<i>Sam Ann Rahok and Koichi Ozaki</i>	
Information Measure Ratio Based Real Time Approach for Hand Region Segmentation with a Focus on Gesture Recognition	172
<i>Ayan Chaki, Pragya Jain, and Rohit Kumar Gupta</i>	
Angle-Doppler Estimation in Heavy Correlated Interference	177
<i>Nafiseh Shahbazi and Hamidreza Amindaver</i>	
Vowel Effects Towards Dental Arabic Consonants Based on Spectrogram	183
<i>N. A. Abdul-Kadir and R. Sudirman</i>	
A More Secure Steganography Method in Spatial Domain	189
<i>Ali Daneshkhah, Hassan Aghaeinia, and Seyed Hamed Seyedi</i>	

G. Industry, Business and Management

Issues in Implementing IT Governance in Small and Medium Enterprises	197
<i>Masarat Ayat, Maslin Masrom, Shamsul Sahibuddin, and Mohammad Sharifi</i>	

H. Human Factors, Social & Economic Sciences

ASHAN ('Alphabets and Scripts by Hand and Audio, Naturally') - A Tool for Learning Scripts and Languages	205
<i>Mathew T. Joseph, Mahesh Kulkarni, Ajay Lohokare, and Swapnil Belhe</i>	
Semiotic Differences of Macintosh Os X & Microsoft Windows 7 Based on Metaphors and Interpretation	209
<i>Raghdah Sadik Abdulhassan, Mona Masood, and Al-Samarraie Hosam</i>	

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

Lowcost Structural Health Monitoring Scheme Using MEMS-Based Accelerometers	217
<i>Tran Duc Tan, Nguyen Tien Anh, and Gian Quoc Anh</i>	
Experiments and Analysis of MCL Based Localization for Mobile Robot Navigation	221
<i>Tae Gyun Kim, Nak Yong Ko, and KwangJin Kim</i>	

K. Energy, Power Generation and Distribution

Implementation Off-grid Solar Powered Technology to Electrify Existing Bus Stop	231
<i>S. S. S. Ranjit, C. F. Tan, and S. K. Subramaniam</i>	
Energy Information Gateway for Home	235
<i>Arpan Pal, Chirabrata Bhaumik, Jasma Shukla, and Subrata Kolay</i>	
Simulation and Analysis of Advanced Nuclear Reactor and Kinetics Model	241
<i>Syed Bahauddin Alam, Md. Nazmus Sakib, A. B. M. Rafi Sazzad, and Imranul Kabir Chowdhury</i>	
Simulation of Transmutation β by Decay Energetics	245
<i>Syed Bahauddin Alam, Md. Nazmus Sakib, Md Sabbir Ahsan, Khaled Redwan, and Imranul Kabir Chowdhury</i>	
Simulation of Bremsstrahlung Production and Emission Process	249
<i>Syed Bahauddin Alam, Md. Nazmus Sakib, Md Sabbir Ahsan, A. B. M. Rafi Sazzad, and Imranul Kabir Chowdhury</i>	

N. Parallel and Distributed Architectures and Systems

Implementation of the Phase II Compiler for the ARM7TDMI-S Dual-Core Microprocessor	255
<i>Sherry Joy Alvionne V. Sebastian, Anastacia B. Alvarez, Alvin Joseph J. Tang, and Joy Alinda R. Madamba</i>	
Performance Evaluation of Intel and Portland Compilers Using Intel Westmere Processor	261
<i>Muhammed Al-Mulhem and Raed Al-Shaikh</i>	
A Fast Simulation for Thousands of M/2M/2 Parallel Homogeneous Fork/Join Pipelines	267
<i>Ray Jinzhu Chen, Muchenxuan Tong, and Chuan Jiang</i>	
Dependency Aware Placement in Reconfigurable Computing Systems	272
<i>Foad Lotfifar, Hadi Shahriar Shahhoseini, and Himan Khanzadi</i>	
A Parallel & Distributed Implementation of the Harmony Search Based Supervised Training of Artificial Neural Networks	277
<i>Ali Kattan and Rosni Abdullah</i>	
Design of Hierarchical Thread Pool Executor for DSM	284
<i>Sitharamaiah Ramiseti and Rajeev Wankar</i>	

P. Internet Modelling, Semantic Web and Ontologies

Collections of Web Services for Applications in Physics	291
<i>Eliza Consuela Isbasoiu</i>	
An Ontology-Based Context Model for Building Context-Aware Services	296
<i>Wang Wusheng, Li Weiping, Wu Zhonghai, Chu Weijie, and Mo Tong</i>	
RDBMS for Service Repository and Matchmaking	300
<i>Deepak Chenthati, Hrushikesh Mohanty, and Avula Damodaram</i>	
Finding Compatible People on Social Networking Sites: A Semantic Technology Approach	306
<i>Arefeh Kazemi and Mohammadali Nematbakhsh</i>	

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

Nonlinearity Modelling of QoE for Video Streaming over Wireless and Mobile Network	313
<i>Herman, Azizah Abd. Rahman, Yoanda Alim Syahbana, and Kamalrulnizam Abu Bakar</i>	
SER of Multi-hop Decode and Forward Cooperative Communications under Rayleigh Fading Channel	318
<i>Wanchalaerm Muenthetrakoon, Kittikhun Khutwiang, and Chirawat Kotchasarn</i>	
BER of Alamouti STC with Multiple Relays Using Amplify and Forward Cooperative Diversity over Rayleigh Fading Channel	324
<i>Panumard Duangkird, Srichai Kraisingomnuek, and Chirawat Kotchasarn</i>	
A Project Management Approach to Service Delivery Model in Portal Implementation	329
<i>Muhammed Al-Sudairi, Abdullah S. Al-Mudimigh, and Zahid Ullah</i>	
Securing EPCglobal Object Name Service - Privacy Enhancements for Anti-counterfeiting	332
<i>Matthieu-P. Schapranow, Alexander Zeier, Felix Leupold, and Tobias Schubotz</i>	
A Mechanism for Detection of Cooperative Black Hole Attack in Mobile Ad Hoc Networks	338
<i>Jaydip Sen, Sripad Koilakonda, and Arijit Ukil</i>	
Optimal Path Selection for Multihomed Heterogeneous Wireless Networks	344
<i>Zifan Li, Tao Zhang, and Chong Shen</i>	
GPS-Based Wireless Ad Hoc Network for Marine Monitoring, Search and Rescue (MSnR)	350
<i>T. D. Ta, T. D. Tran, D. D. Do, H. V. Nguyen, Y. V. Vu, and N. X. Tran</i>	

Loss Probability in Networks with Pareto Distributed Traffic	355
<i>Sayeed Ghani and Faisal Iradat</i>	
Fault-Tolerant Base Station Based Target Tracking in WSNs	361
<i>Rahim Pasha Khajei, Abolfazl Toroghi Haghighat, and Jaber Karimpour</i>	
Attacks Analysis in Mobile Ad Hoc Networks: Modeling and Simulation	367
<i>Karim Konate and Abdourahime Gaye</i>	

S. Performance Engineering of Computer & Communication Systems

Simulation Model, Warm-up Period, and Simulation Length of Cellular Systems	375
<i>Samad Salehi Kolahi</i>	
A Theoretical Model to Calculate the Bandwidth of IMS Session Establishment	380
<i>Wagdy A. Aziz, Dorgham Sisalem, Salwa H. El-Ramly, Mohsen M. Tantawy, and Magdy M. Ibrahim</i>	
Evaluating the Performance of Heterogeneous Distributed Memory Parallel Computer System Using Recursive Models	386
<i>O. E. Oguike, M. N. Agu, D. U. Ebem, S. C. Echezona, H. O. D. Longe, and O. Abass</i>	

T. Circuits, Sensors and Devices

Three-Axis Piezoresistive Accelerometer with Uniform Axial Sensitivities	395
<i>Tran Duc Tan and Nguyen Tien Anh</i>	
Performance Comparisons of New Excitation Coil Design Aspects in Magnetic Induction Tomography (MIT) Applications	400
<i>Zulkarnay Zakaria, Muhamad Hafiz Bin Hussin, Ruzairi Abdul Rahim, Nur Farahiyah Mohammad, Azian Azamimi Abdullah, Sazali Yaacob, and Syed Mustafa Kamal Syed Aman</i>	
The Emerging Role of EM Simulation in IEEE 802.16e Mobile WiMAX Power Amplifier Design	404
<i>Syuhaimi Kassim and Fareq Malek</i>	
Investigation of Si ₃ N ₄ Capping Layer and Embedded SiGe Effect on 90 nm CMOS Devices	410
<i>H. Hussin, N. M. Zain, and A. S. Zoolfakar</i>	

U. e-Science and e-Systems

A Basic Digital Watermarking Algorithm in Discrete Cosine Transformation Domain	419
<i>Md. Nazmus Sakib, Syed Bahauddin Alam, A. B. M. Rafi Sazzad, Celia Shahnaz, and Shaikh Anowarul Fattah</i>	
A Bidding Strategy in Combinatorial Auctions	422
<i>Sara Sharifi Sedeh, Mohammad Ali Nematbakhsh, and Faria Nasiri Mofakham</i>	
Author Index	429