World Congress On Information and Communication Technologies (WICT 2011) Mumbai, India 11th-14th December 2011.

organized by

MIR Labs, USA

and

University of Mumbai, India

FOREWORD

BY HON'BLE VICE CHANCELLOR, UNIVERSITY OF MUMBAI

University of Mumbai is honoured in jointly organizing the "World Congress on Information and Communication Technologies (WICT-2011)" along with MIR Labs, Washington, USA.

As we all know, Information Technology (IT) has touched almost every conceivable area of human life throughout the World. Emergence of Information and Communication Technologies (ICT) on the national and international agenda, witnesses the impact of IT on good governance, sustainable development, globalization of economy and social empowerment.

I believe that WICT-2011 will serve as one of the major forums for researchers and practitioners from academics and industry to discuss and exchange ideas and opinions, which will result in social change.

I take this opportunity to extend a warm welcome to all the distinguished delegates and participants. I wish the conference a grand success.

Dr. Rajan Welukar,
Hon'ble Vice Chancellor,
University of Mumbai,
Mumbai, India.

Welcome Note from WICT 2011 Chairs

Welcome to Mumbai, India and to the World Congress on Information and Communication Technologies (WICT 2011) during December 11-14, 2011.

In the past century, our society has been through several periods of dramatic changes, driven by innovations such as transportation systems, telephone etc. Last few decades have experienced technologies that are evolving so rapidly, altering the constraints of space and time, and reshaping the way we communicate, learn and think. Rapid advances in information technologies and other digital systems are reshaping our ecosystem. Innovations in ICT allow us to transmit information quickly and widely, propelling the growth of new urban communities, linking distant places and diverse areas of endeavor in productive new ways, which a decade ago was unimaginable. Thus, the theme of this World Congress is "Innovating ICT For Social Revolutions".

The four day World Congress is expected to provide an opportunity for the researchers from academia and industry to meet and discuss the latest solutions, scientific results and methods in the usage and applications of ICT in the real world. WICT 2011 is Co-Organized by Machine Intelligence Research Labs (MIR Labs) and University of Mumbai. The Conference is hosted by the University of Mumbai.

WICT 2011 invited papers for the following tracks:

- Bioinformatics and Computational Biology
- Computer Graphics and Virtual Reality
- Data Mining
- e- Learning
- e- Business
- e- Goverment
- Artificial Intelligence
- Web Services and Semantic Web
- Grid and Cloud Computing
- Ambient Intelligence
- Body Sensor Networks
- Computational Finance and Economics
- Cybercrime (Legal and Technical Issues)
- Computer Network Security
- Data Mining for Information Security
- Academic Integrity, Plagiarism Detection and Software Misuse
- Intrusion Detection and Forensics
- Scheduling for large scale distributed system

- The Role of Technology in Education and Health
- Nature Inspired Optimization Algorithms and their Applications
- Data management

WICT 2011 also received the following proposals for International workshops and special sessions:

Workshops

- Location-Aware Technologies and Applications on Ubiquitous Computing Devices
- Meta-Heuristics and Information Technology
- Computational Intelligence Techniques for Image Processing and Pattern Recognition Problems
- Nature Inspired Algorithms in Electric Power Systems (NIA-EPS 2011)
- Learning from Nature: Evolutionary and Hybrid E–learning Methodologies in Engineering (E&H-e–L 2011)

Special Sessions

- Energy Efficient Wireless Sensor Networks
- Software Engineering Practices and Applications
- Emerging Trends in On-Chip Communications
- Nature Inspired Optimization Algorithms and Their Applications

WICT 2011 is technically co-sponsored by IEEE Systems, Man & Cybernetics Society, Mumbai, Spain, Czechoslovakia, Tunisia, Hungary Chapters and Technically Supported by IEEE Systems Man and Cybernetics Society, Technical Committee on Soft Computing.

Many people have collaborated and worked hard to produce a successful WICT-2011 conference. First and foremost, we would like to thank all the authors for submitting their papers to the conference, for their presentations and discussions during the conference. Our thanks to Program Committee members and reviewers, who carried out the most difficult work by carefully evaluating the submitted papers. We are grateful to the following speakers for finding time to share their knowledge with the WICT 2011 attendees:

WICT 2011 Plenary Speakers

- Saeid Nahavandi, Deakin University, Australia
- Václav Snášel, VSB-Technical University of Ostrava, Czech Republ

- Hideyasu Sasaki, The Chinese University of Hong Kong, Hong Kong
- Gauri S. Mittal, University of Guelph, Canada
- Emilia I. Barakova, Eindhoven University of Technology, Netherlands
- Aditya K. Ghose, University of Wollongong, Australia
- Nikitas Sgouros, University of Piraeus, Greece
- Elpida Tzafestas, University of Athens, Greece
- Sankar K. Pal, Indian Statistical Institute, India
- Andre de Carvalho, University of Sao Paulo, Brazil

WICT 2011 Tutorial Speakers

- Asoke Nath, St. Xavier's College, India
- Gauri S. Mittal, University of Guelph, Canada
- Mohamed Chawki, University of Lyon III, France

WICT'11 received over 600 submissions from over 40 countries. The themes of the contributions and scientific sessions range from theories to applications, reflecting a wide spectrum of coverage of the ICT topics. Each paper was reviewed by at least 5 reviewers in a standard peer-review process. Based on the recommendation by Five independent referees, finally less than 250 papers were accepted for publication in the proceedings published by IEEE.

We look forward to seeing you in Mumbai, India during WICT 2011.

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Dharma Agrawal, University of Cincinatti, USA
Siby Abraham, University of Mumbai, India

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Siby Abraham, University of Mumbai, India

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Fatos Xhafa, Technical University of Catalonia, Spain

Track: The Role of Technology in Education and Health
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Suvobrata Sarkar, Dr. B.C Roy Engineering College,Durgapur, India
Veera Jyoti Badnal, Chaitanya Bharathi Institute of Technology, Hyderabad,India
Vijayakumar Varadarajan, Anna University, Chennai, India
Paresh shah,SSBT's College of Engineering & Technology,Bambhori, India
T.Thambidurai, Precision Infomatic(M) Private Limited,India

General Information

Venue Information

WICT2011 is held at Vidyanagari Campus of University of Mumbai, Mumbai. The Campus is located at 12kms from the Chhatrapati Shivaji International airport of Mumbai and about 8kms from the domestic airport. Mumbai is very well connected to other parts of India through rail. The trains terminate at Chhatrapati Shivaji Terminal (CST), Mumbai Central, Kurla Terminal or Bandra Terminals.
To reach venue, one can taxis, suburban railway network or bus. The closest suburban railway stations to the venue are Santacruz on the Western Railway and Kurla on the Central Railway. The inauguration and plenary sessions will be held at the Banyan Hall (Pherozeshah Mehta Bhavan, Ground floor, University Department of Civics and Politics). The parallel sessions will be held at different halls adjacent to it. (Refer to the map for details).

WICT2011 Registration

The WICT2011 Registration area is located at the Banyan Hall, ground floor of the Pherozeshah Mehta Bhavan. Pre-registered participants must pick up their badges and conference materials from this area. On-site registration for the conference will be available subject to availability. Onsite registration for Tutorials will be available at the Neem Hall (Marshall Hall, 3rd Floor JN Library), where the tutorials are scheduled.

WICT2011 Information Desk

The Congress information, publications, CD's etc will be available at the Registration Desk. The desk is staffed by members of Local Organizing Committee and Student Volunteers who can answer your WICT2011 questions and assist with special needs.

Name Badges

Your WICT2011 name badge serves as your admission pass to congress sessions and events. Please wear your name badge at all times while inside the Vidyanagari Campus. Congress organizers reserve the right to deny admission to any persons not wearing a WICT2011 name badge.

Internet Access

The congress delegates can access Internet service being provided at the Computer Centre of WICT2011, which is located at the University Department of Computer Science, Ground floor, B-Wing, Ranade Bhavan. The Congress site also offers Wifi connectivity. For access, please contact help desk at the registration desk or Mr. Nikhil Pawanikar, Assistant Professor, Department of IT, Mobile: +91-9967753517.

Electrical Power
The consumer Electric supply in India is 240 Volts AC, altering at 50 cycles per second (50 Hz). The plug & receptacle in use is the Type D Power Plug (BS546 for 5A / 15 A) also known as the Old British Plug. If you are traveling to the WICT from outside India, you might require a voltage/Frequency/plug converter if you are carrying or intend to use, a device that does not conform to the above standard. We regret WICT2011 will not be able to provide power/plug converters, extension cords, power strips or any other electric accessories. Thank you for your understanding.

Cell Phone Courtesy
Please be considerate in your cell phone use. WICT2011 requests that all cellular phones, pagers and other equipment with audible alarms of any kind be turned off in all sessions as a courtesy to the presenters and to the attendees.

Lost & Found
Please turn all lost and found items into the Registration Desk.

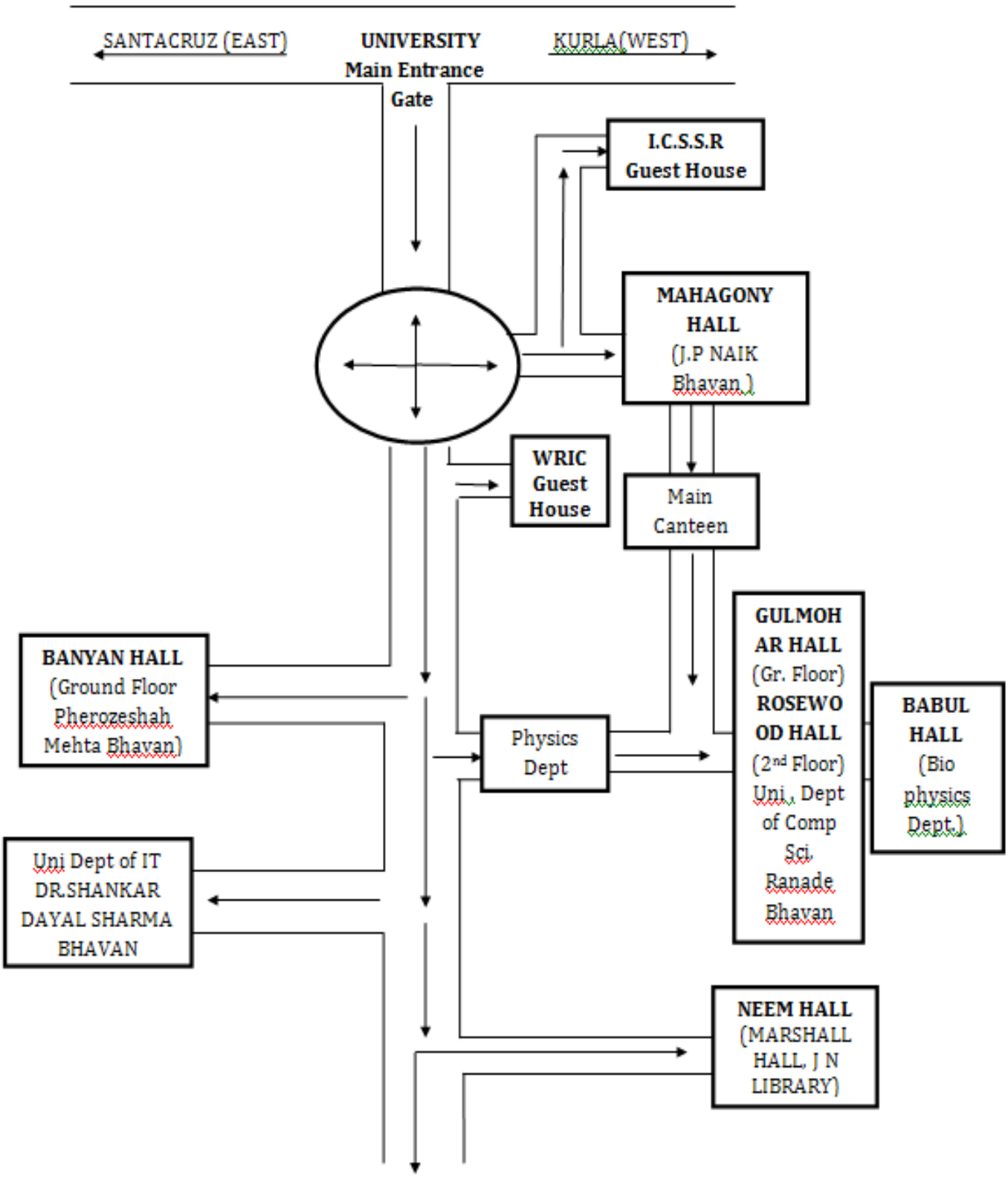
Smoking Policy
WICT2011 is smoke free and the venues are non-smoking areas.

Weather at Mumbai
Sited next to the Arabian Sea and within the tropical zone, the climate of Mumbai in the month of December is at its most pleasant and stable. Occasionally northerly winds can cause temperatures to plummet during the dry season, feeling a little chilly. This is especially so at night-time, although temperatures rarely drop below 20°C / 68°F.

First Aid/Emergency
Your safety is our primary concern. In case of an emergency, please contact the conference Registration Desk immediately for assistance. There is also a Health Centre located at the ground floor of the building near the main entrance of the Vidyanagari Campus.

Local Travel Assistance
For local travel assistance, please contact help desk at the registration desk or Mr. Dhanraj Jadhav, Assistant Professor, Department of IT. Mobile: +91-8268526591.

Map of WICT 2011 venue



Guidelines to WICT 2011 presenters

For oral presentation

- Presentations are scheduled for a maximum time of 15 minutes with 2 additional minutes for question answering.
- Presentations can only be in electronic Power Point formats. Files should be Microsoft Power Point 2003 compatible.
- There will be a laptop and an LCD available for presenters in the conference rooms.
- Upload all presentations one hour prior to their presentations at the laptop provided in the conference hall where your session is scheduled.
- Please have your presentation file named using Session-Id and Paper-Id. (Example: A4-Paper125)
- You may bring your file on a CD or a USB flash disk.

For Poster presentation

- Poster presentations are scheduled during coffee/tea break on 12th and 13th December 2011.
- Posters will be available for display on both days.
- The presenters will be given a space admeasuring A0 size (1189 mm by 841 mm). The posters can be any size like A0, A1,A2, A3 or A4. However the maximum space allocated will be of A0 size.

WICT 2011 Technical Program Schedule

Day 1: 11th December 2011
Venue: Neem Hall (Marshall Hall, 3rd floor, J.N. Library)

Time	Event
9.30 AM – 1.30 PM	Registration
1.30 PM -3.00 PM	**Tutorial 1:** Gauri S Mittal, University of Guelph, Canada Engineering System Modeling and Simulation for Optimal Design
3.00 PM – 4.30 PM	**Tutorial 2:** Mohamed Chawki, University of Lyon III, France Cybercrimes : Threats from a Networked Environment
4.30 PM - 4.50 PM	Coffee /Tea Break
4.50 PM – 6.20 PM	**Tutorial 3:** Asoke Nath, St Xavier's College(Autonomous), Kolkata, India Cryptography and Network Security

Conference Venue: Vidyanagari, Kalina Campus, University of Mumbai.

Address:
University of Mumbai,
Vidyanagari, Kalina, Santacruz (East)
Mumbai, India.
PIN 400098

Note: Please note that there are two campuses for University of Mumbai in Mumbai –Fort and Vidyanagari.

The Congress will be held in Vidyanagari Campus of the University

Day 2: 12th December 2011 Venue: Banyan Hall (Pherozeshah Mehta Bhavan, Ground floor, University Department of Civics and Politics)	
8.00 AM -9.00 AM	Registration and Break fast
9.00 AM – 9.30 AM	Inauguration
9.30 AM – 10.20 AM	**Plenary talk:** Saeid Nahavandi, Deakin University, Australia Knowledge Management in Process Control using Simulation and Modeling techniques
10.20 AM - 11.10 AM	**Plenary talk:** Sankar K Pal, Indian Statistical Institute, India Machine Intelligence, Granular Mining and Image Analysis: F-granulation, Rough-Fuzzy Approach and Challenges
11.10 AM - 11.30 AM	Coffee/Tea Break
11.30 AM – 12.20 PM	**Plenary talk:** Aditya K. Ghose, University of Wollongong, Australia. The Optimizing Web: Leveraging efficiencies from collaborative services
12.20 PM – 12.50 PM	**Plenary talk:** Hide Sasaki, Chinese University of Hong Kong, Hon Kong. Human- Machine Interaction in Time Critical Communications
12.50 PM – 2.00 PM	Lunch Break
2.00 PM – 4.30 PM	Parallel Sessions
4.30 PM - 5.00 PM	Coffee/Tea Break /Poster Presentation
5.00 PM – 7.00 PM	Parallel Sessions
Day 3: 13th December 2011 Venue: Banyan Hall (Pherozeshah Mehta Bhavan, Ground floor, University Department of Civics and Politics)	
8.30 AM – 9.00 AM	Break fast
9.00 AM – 9.50 AM	**Plenary talk:** Emilia I. Barakova, Eindhoven University of Tech, Netherlands. Brain-inspired robots for social training of autistic children
9.50 AM - 10.40 AM	**Plenary talk:** Elpida Tzafestas, University of Athens, Greece Constraints and Effects of Partner Selection on the Emergence of Structures in Social Environments
10.40 AM – 11.00 AM	Coffee /Tea Break

11.00 AM - 11.50 AM	**Plenary talk:** Andre de Carvalho, University of Sao Paulo, Brazil Using meta learning for technique recommendation
11.50 AM – 12.40 PM	**Invited talk:**
12.40 PM -1.30 PM	Lunch Break
2.00 PM – 4.30 PM	Parallel Sessions
4.30 PM – 5.00 PM	Coffee /Tea Break /Poster Presentation
5.00 PM – 7.00 PM	Parallel Sessions
7.00 PM – 7.30 PM	Break
7.30 PM – 9.30 PM	Social Function and Gala Dinner
Day 4: Wednesday, 14th December 2011 **Venue: Banyan Hall (Pherozeshah Mehta Bhavan, Ground floor, University Department of Civics and Politics)**	
8.30 AM – 9.00 AM	Break fast
9.00 AM - 9.50 AM	**Plenary talk:** Gauri S Mittal, University of Guelph, Canada Sensors and Sensor networks in health, food, safety and quality detection
9.50 AM – 10.40 AM	**Plenary talk:** Václav Snášel, VSB-Technical University, Ostrava, Czech Republic Social Network Analysis
10.40 AM- 11.00 AM	Coffee /Tea Break
11.00 AM – 11.50 PM	**Plenary talk:** Nikitas Sgouros, University of Piraeus, Greece Means of Expression, Rendering and Analysis of Collective Reactions in Social Interaction Environment.
11.50 AM- 12.40 PM	**Invited talk:**
12.40 PM – 1.30 PM	Lunch Break
1.30 PM – 3.30 PM	Parallel Sessions
3.30 PM – 3.50 PM	Valedictory
3.50 PM – 4.30 PM	Coffee/Tea Break and Good Bye

Social Function:

Social function involves cultural programs of around 1 hour depicting Indian culture, tradition and advances in music and dance. It will be held in the Banyan Hall.

Parallel Sessions:

Day 2: 12th December 2011 Venue: Banyan Hall (Pherozeshah Mehta Bhavan, Ground floor, University Department of Civics and Politics)		
2.00PM - 4.30 PM	**Parallel Session: A1 Main track: Networks and Computing-I Chair: Saeid Nahavandi**	
Paper ID	**Paper Title**	**Author(s)**
64	Impact of Area's Shape on MANET	Chander Kumar Nagpal, Shailender Gupta, Bharat Bhushan
241	Dynamic Channel Management for Advanced, Energy-Efficient Sensor-Actor-Networks	Matthias Vodel, Mirko Lippmann Wolfram Hardt
294	Location management in wireless networks: A survey	Poulami Das, Aniruddha Chandra
297	An Interference Graph Based MAC Protocol for Multi Rate Ad Hoc Networks	Sunita Varma, Vrinda Tokekar
307	Enhancement in Intrusion detection System using Adaptive Acknowledgement based Algorithm	Sonali Botkar, Shubhangi Chaudhary
331	Wideband Spectrum Sensing based on Energy Detection for Cognitive Radio Network	Sesham Srinu, Samrat Sabat Siba K Udgata
382	Construction of (N +M)-Direct codes in GF(2N)	R. S. Raja Durai, Meenakshi Devi
424	Dynamic Resource Reservation for Vehicles in Heterogeneous Wireless Networks Environment	Sulata Mitra
446	Evaluation and Ranking of Supplier at a Service Firm Using Analytic Hierarchy Process	Saroj Koul, Ankur Saraswat, Rakesh Verma
470	Reliability Estimation of Learning based Mobile Agent System in MANET	Chandreyee Chowdhury, Sarmistha Neogy
501	Facial Expression Invariant Person Recognition using Feature Level Fusion of Visual and Thermal Images	Mrinal Bhowmik, Debotosh Bhattacharjee, Dipak Basu and Mita Nasipuri
591	RECM: Reliable and Energy effective	Tohid Bagheri

	Clustering based Multi-path routing algorithm for wireless sensor networks	Ali Ghaffari

Day 2: 12th December 2011 Venue: Rosewood Hall (Seminar Hall 1, 2nd Floor, B Wing, University Department of Computer Science, Ranade Bhavan)		
2.00 PM - 4.30 PM	**Parallel Session: B1 Track: Artificial Intelligence Chair: Emilia I Barakova**	
Paper ID	**Paper Title**	**Author(s)**
108	Music Chords: Emotions and Sonantometry	Mykhaylo Khramov and Vadim Madgazin
124	Hybrid Approach :Predictive Data Mining Model for Atrial Fibrillation	Aankita Kaur
189	Evolution of User Dependent Model to Predict Future Usability of a Search Engine.	Shruti Kohli and Ela Kumar
200	Edge Detection Techniques Using Fuzzy Thresholding.	Mehul Thakkar and Hitesh Shah
230	Dimensionality Reduction Using Genetic Algorithm And Fuzzy-Rough Concepts.	Moumita Saha and Jaya Sil
261	Learning Disability Diagnosis and Classification – A Soft Computing Approach.	Pooja Manghirmalani, Zenobia Panthaky and Kavita Jain
322	Adaptive Tabu Search Algorithm for RP Selection in Protocol Independent Multicast – Sparse Mode	Manas Ranjan Kabat and Satyaprakash Sahoo
341	Optimization of Routing Algorithms in Ad-hoc Networks using Swarm Intelligence.	Sumit Kumar, Rama Chaudhary and Nitin
356	Development And Implementation Environment Of Fuzzy Object Oriented Models With Partial Inheritance And Aggregation Relationships	Ismail Ataie, Nasser Ghasem-Aghaee and Tania Taami
395	A Qos Based Routing Using Genetic Algorithm	Akash Punhani and Nitin
419	Game Theoretic Model for Collision	Seema Purohit and Shruti Mantri

	Free Geometric Path in a Dynamic Environment	
423	Credit Evaluation Model of Loan Proposals for Indian Banks	Seema Purohit and Anjali Kulkarni
593	Siddhataa: Automatic Theorem Prover Based on Equational Reasoning	Adway Lele, Jayant Kirtane and Ambuja Salgaonkar

Day 2: 12th December 2011 Venue: Gulmohar Hall (Seminar Hall 2, Ground Floor, B-Wing, University Department of Computer Science, Ranade Bhavan)		
2.00 PM - 4.30 PM	**Parallel Session: C1 Track: Emerging Trends in On Chip Communication (SS3) Chair: Mohammed Ayoub Khan**	
Paper ID	**Paper Title**	**Author(s)**
165	FSL: A Novel Topology for on-Chip-Networks	Reza Sabbaghi-Nadooshan, Mahsa Ghorbanian and Hossein Doroud
174	A Novel Methodology for Flip-Flop Optimization and Characterization in NOC design space	Satish Chandra Tiwari, Kunwar Singh and Maneesha Gupta
175	A High Performance Flip Flop for Low Power Low Voltage Systems	Kunwar Singh, Satish Chandra Tiwari and Maneesha Gupta
221	High Speed CMOS Charge Pump Circuit for PLL Applications using 90nm CMOS Technology	Jyoti Gupta, Ankur Sangal and Hemlata Verma
324	A Physical Design Flow to Eliminate Glitch Power in Digital CMOS Circuits	Vasantha Kumar B.V.P, Murthy Sharma N. S., Lal Kishore K, Vivekanand M, Murthy Raju K and Divyaswetha Sirigineedi
337	A New 5- transistor XOR-XNOR Circuit Based on The Pass Transistor Logic	Rajeev Kumar and Vimal Kant Pandey
387	Low Power Synchronous Buffer Based Queue for 3D MPSoC	Jagrit Kathuria, Aakriti Chhabraa, Gagandeep Kaur and Raman Chadha
390	Review of 3-D Network-on-Chip Topologies	Shivam Tyagi and Shweta Bohare
402	Second Order Multi-Mode Allpass Filter Using Single Current Differencing Buffered Amplifier	Gagandeep Kaur
405	Power Analysis of TH23 Null	Sanjay Jaiswal and Kumkum Verma

	Conventional Logic	
567	An Adaptive Particle Swarm Optimization based Fuzzy Logic Controller for Line of Sight Stabilization Tracking and Pointing Application	Ravindra Singh, M. Hanumandlu and Shahida Khatoon
568	A Novel approach based on Choquet fuzzy Integral Controller for Line of sight Stabilization Application	Ravindra Singh, M. Hanumandlu, Shahida Khatoon and Ibraheem Ibraheem
580	An efficient tree-based topology for network-on-chip	M.Ayoub Khan and A Q Ansari
586	n-Bit Multiple Read and Write FIFO Memory Model for Network-on-Chip	M.Ayoub Khan and A Q Anasari
587	Energy and Power Issues in Network-on chip	Manoj Sharma and Ayoub Khan

Day 2: 12th December 2011 Venue: Babul Hall (Seminar Hall, Ground Floor, University Department of Bio-Physics)		
2.00 PM-4.30 PM	**Parallel Session – D1 Track: Nature Inspired Optimization Chair: Millie Pant**	
Paper ID	**Paper Title**	**Author(s)**
137	Particle Swarm Optimization with Adaptive Polynomial Mutation	Tapas Si, Nanda Dulal Jana and Jaya Sil
143	Self Adaptive Mutation Step Size in Differential Evolution Algorithm	Tarun Kumar Sharma and Millie Pant
186	Optimization of Analog RF Circuit Parameters using Randomness in Particle Swarm Optimization	Sudheer Kamisetty, Jyoti Garg, Jai Narayan Tripathi and Jayanta Mukherjee
208	Differential Evolution Embedded Otsu's Method for Optimized Image Thresholding	Sushil Kumar, Millie Pant and Amiya Kumar Ray
243	A New Fine Grained Inertia Weight Particle Swarm Optimization	Kusum Deep, Pinkey Chauhan and Millie Pant
256	Information Preserving Selection Strategy for Differential	Pravesh Kumar, Millie Pant and V.P. Singh

	Evolution Algorithm	
266	Optimization of uncertain Construction Time-Cost Trade-off Problem Using Simulated Annealing Algorithm	Manal Osman Suliman and Wael Abdulal
272	An Optimal Edge Detection using Universal Law of Gravity and Ant Colony Algorithm	Op Verma and Rishabh Sharma
284	Application of Genetic Algorithm on Quality Graded Networks for Intelligent Routing	T. R. Gopalakrishnan Nair and Ms. Kavitha Sooda
334	Evolutionary Approach for building Efficient Paraphrase Recognizers	A.Chitra and Anupriya Rajkumar

Day 2: 12th December 2011 **Venue: Banyan Hall (Pherozeshah Mehta Bhavan, Ground floor, University Department of Civics and Politics)**		
5.00 PM - 7.00 PM	**Parallel Session: A2** **Track: Intelligent Systems and Speech Processing** **Chair: Hide Sasaki**	
Paper ID	**Paper Title**	**Author(s)**
81	An Automated Course Feedback System using Opinion Mining	Vivek Kumar Singh, Pramila Kumari, Aradhana Singh and Jhumi Thapa
116	Design of shared-nothing cluster architecture for fast accessing and highly availability of data in heterogeneous database environment	Deepak Sukheja and Umesh kumar Singh
188	Comparative Analysis of Steganographic Algorithms intacting the information in the Speech Signal for enhancing the Message Security in next Generation Mobile devices	Sarosh Dastoor
212	Membership and Inference Rule Generation for Fuzzy-Neural MIMO Channel Estimator	Kandarpa Kumar Sarma and Abhijit Mitra
218	Real Time and Embedded Implementation of Hybrid Algorithm for Speech Enhancement	Jigar Shah and Satish Shah

227	An Application of Fractional Intelligent Robust Controller for Electromechanical Valve	Tribeni Prasad Banerjee, Swagatam Das, Suman Saha and Ajith Abraham
271	Optimal placement of Phasor Measurement Units against PMU outage and Line outage Using advanced particle swarm optimization techniques	Teja Swaroop Tumapala and Kameswara Rao Ryali

Day 2: 12th December 2011 Venue: Rosewood Hall (Seminar Hall 1, 2nd Floor, B Wing, University Department of Computer Science, Ranade Bhavan)		
5.00 PM - 7.00 PM	**Parallel Session: B2 Track: Bio Computing and Bioinformatics (BCB) Chair: Emilio Corchado**	
Paper ID	**Paper Title**	**Author(s)**
141	Classification of Proteins in Intracellular and Secretory Pathway using Global Descriptors of Amino Acid Sequence.	Geetha Govindan and Achuthsankar S. Nair
274	Segmentation and grading of diabetic retinopathic exudates using error-boost feature selection method.	Pradeep Kumar, Prashanth Chandran and Kavitha Ganesan
276	Multiprocessor Implementation of Modeling Method for Planted Motif Problem.	Subrahmanyam Desaraju and Ravi Mukkamala
279	Magnetic Resonant Image Segmentation using trained K-means Clustering.	Anil Kumbhar and A.V. Kulkarni
283	An Efficient Hybrid Clustering Approach of Microarray Gene Expression Data.	Priscilla R and Swamynathan S
350	Missing Value Estimation in Microarray Data Using Coregulation and Similarity of Genes.	Amit Paul and Jaya Sil
409	Comparison of Coaxial Choke and Extended Tip Choke Antenna for Interstitial Microwave Ablation of HCC.	Surita Maini and Anupma Marwaha

574	Switching of The Surface Electrodes Array in A 16-Electrode EIT System Using 8-Bit Parallel Digital Data.	Tushar Kanti Bera and J. Nagaraju
592	Improving the Image Reconstruction in Electrical Impedance Tomography (EIT) with Block Matrix-based Multiple Regularization (BMMR): A Practical Phantom Study.	Tushar Kanti Bera, Samir Kumar Biswas, K. Rajan and J. Nagaraju

Day 2: 12th December 2011 Venue: Gulmohar Hall (Seminar Hall 2, Ground Floor, B Wing, University Department of Computer Science, Ranade Bhavan)		
5.00 PM - 7.00 PM	**Parallel Session: C2 Track: Computational Finance / Detection Systems Chair: Vijaylakshmi Pai**	
Paper ID	**Paper Title**	**Author(s)**
46	Face Detection Using Skin Tone Segmentation.	Sayantan Thakur, Ankur Mondal, Swagatam Das, Ajith Abraham and Sayantanu Paul
139	Metaheuristic optimization of Risk Budgeted Global Asset Allocation portfolios.	G A Vijayalakshmi Pai and Thierry Michel
329	A Robust Portfolio Optimization in Indian Stock Market.	Rajan M.P. and Nimit Rana
342	A Facial Caricature Generation System using Adaptive Thresholding.	Upasna Dal, Divyata Dal and Siby Abraham
379	A model based on Context Discussions for locationing mobile user.	Neeraj Garg, Jitender Lather and Sanjay Dhurandher
478	CBIR using Texels of RGB colour Textons.	Sudhakar Putheti, Sai Alekya Edara and Edara Srinivasa Reddy
489	Code clones in Program Test Sequence Identification.	Anupama Surendran, Philip Samuel and K. Poulose Jacob
541	Symmetric key Cryptosystem using combined Cryptographic algorithms - Generalised modified Vernam Cipher method, MSA method and NJJSAA method: TTJSA algorithm.	Trisha Chatterjee, Tamodeep Das, Joyshree Nath, Shayan Dey and Asoke Nath
548	An Integrated Symmetric key Cryptography Algorithm using	Debanjan Das, Joyshree Nath, Megholova Mukherjee, Neha

	Generalised modified Vernam Cipher method and DJSA method: DJMNA symmetric key algorithm.	Choudhary and Asoke Nath
551	A new randomized data hiding algorithm with encrypted secret message using modified generalized Vernam Cipher Method: RAN-SEC algorithm	Rishav Ray, Jeeyan Sanyal, Tripti Das, Kaushik Goswami, Sankar Das and Asoke Nath

Day 2: 12th December 2011 Venue: Babul Hall (Seminar Hall, Ground Floor, University Department of Bio-Physics)		
5.00 PM - 7.00 PM	**Parallel Session – D2 Track: Track: Cyber Crime and Electronic Services Chair: Shailendra Singh**	
Paper ID	**Paper Title**	**Author(s)**
147	Mechanics of Domain Names and Indian Judicial Approach to their Disputes: A Study.	Farooq A. Mir and M. Tariq Banday
493	Credit Card Fraud Detection Using Hidden Markov Model.	Divya Iyer, Arti Mohanpurkar, Sneha Janardhan, Dhanashree Rathod and Amruta Sardeshmukh
222	Towards an Electronic Voting System in Support for Consensus in On-line Learning Discussions.	Santi Caballe
360	A Blended-learning Pedagogical Model for French learning through an Online Interactive Multimedia Environment: Learner Autonomy and Efficacy.	Vasumathi Badrinathan and Abhijeet Gole
578	Effectiveness of e-Learning for International ICT Students: A New Zealand Case Study.	Mehdi Asgarkhani and Amit Sarkar
14	Problems & Prospects of e-Governance in India.	Malaya Dutta Borah and Ganesh Chandra Deka
572	Encryption Based Channel Coding Algorithm for Secure SMS.	Ashok Kumar Nanda and Prof. Lalit Kumar Awasthi

Day 3: 13th December 2011 Venue: Banyan Hall (Pherozeshah Mehta Bhavan, Ground floor, University Department of Civics and Politics)		
2.00 PM - 4.30 PM	**Parallel Session: A3** **Main track: Networks and Computing-II** **Chair: Santi Caballe**	
Paper ID	**Paper Title**	**Author(s)**
159	Enhanced Ad Hoc on Demand Distance Vector Local Repair Trial for MANET.	Priya Naidu
167	Global Cooperative Caching for Wireless Sensor Networks.	Naveen Chauhan, L.K. Awasthi and Narottam Chand
168	Architecture Of Adders Based On Speed ,Area and Power Dissipation	Prashanth .P Prasad and Prabhu Swamy
194	Least Cost Design of Water Distribution Network by Cross Entropy Optimization	Shibu A and M Janga Reddy
239	Location based Radio Resource Allocation (LBRRA) for WiMAX Network	Rakesh Jha
240	Online Fault Detection and Recovery in Body Sensor Networks	Arunanshu Mahapatro and Pabitra Khilar
252	An Efficient Resource Allocation Scheme with Partial Channel State Information	Sudhir Lande, Rajesh Pande, Jagdish Helonde and S.S. Pathak
282	NPSO Based Optimal Deign and Synthesis of Concentric Circular Antenna Array with Non-isotropic Elements	Durbadal Mandal, Sakti Prasad Ghoshal, Rajib Kar and Kottakota Rajesh
302	Experimental Analysis of Packet Loss during Horizontal and Vertical Handovers in Wireless Access Networks	Sahana Bhosale and Rohin Daruwala
367	Creation of Virtual Node, virtual Link and managing them in Network virtualization.	Navin Mani Upadhyay, P. K. Gupta, Suman Kumar Saurabh and Gunjan Mittal
397	Cross Layer Energy Efficient Cost Link Based Routing for Wireless Sensor Network	Kanojia Sindhuben Babulal
457	Hermite Based UWB Wireless Link	Joanne Gomes

	with Simplified Receiver	
512	Design And Performance Analysis Of Energy Efficient Technique For Wireless Multimedia Sensor Networks Using Machine Learning Algorithm.	Kibrewerk Akalu and Kumudha Raimond

Day 3: 13th December 2011 Venue: Rosewood Hall (Seminar Hall 1, 2nd Floor, B Wing, University Department of Computer Science, Ranade Bhavan)		
2.00 PM - 4.30 PM	**Parallel Session: B3 Track: Data mining Chair: Andre Carvalho**	
Paper ID	**Paper Title**	**Author(s)**
133	Semi-Supervised Text Classification Using Enhanced KNN Algorithm	Mohammed Abdul Wajeed and T.Adilakshmi Adilakshmi
138	A New Method for preserving privacy in Quantitative Association Rules Using DSR Approach With Automated Generation of Membership Function	Sathiyapriya K, Sudha Sadasivam G and Celin N
299	Image Mining using Association rule	Nikhat Fatma Shaikh
396	Performance Evaluation of Decision Tree versus Artificial Neural Network based Classifiers in Diversity of Data Sets	Pardeep Kumar, Dr. Nitin, Vivek Kumar Sehgal and Durg Singh Chauhan
468	A Collaborative Search with Query Expansion and Result Re-ranking	Indumathi D and Chitra T Rajan
547	Predicting Execution Time of Machine Learning Tasks using Metalearning	Rattan Priya Bhasin, Bruno Feres De Souza, André L. D. Rossi and André C. P. L. F. De Carvalho
555	Data Mining and Wireless Sensor Network for Agriculture Pest/Disease Predictions	Amiya Kumar Tripathy and J Adinarayana
558	Pattern Recognition and Knowledge Discovery from Road Traffic Accident Data in Ethiopia: Implications for improving road safety	Tibebe Beshah, Ajith Abraham, Dejene Ejigu, Vaclav Senasel and Pavel Kromer
246	Hesitant Distance Similarity	Ghanshyam Thakur and Neeraj Sahu

	Measures for Document Clustering	
268	Employing Bloom Filters For Privacy Preserving Distributed Collaborative kNN Classification	Mohan Rao Gorai, K.S. Sridharan, Aditya Telidevara, Ravi Mukkamala and Santosh Nukavarapu

Day 3: 13th December 2011 Venue: Gulmohar Hall (Seminar Hall 2, Ground Floor, B Wing, University Department of Computer Science, Ranade Bhavan)		
2.00 PM – 4.30 PM	**Parallel Session: C3 Chair: Ramakrishnan**	**Track: W3**
Paper ID	**Paper Title**	**Author(s)**
109	Optimizing Speech Naturalness in Voice User Interface Design: A Weakly-Supervised Approach	Moses Ekpenyong
120	Semi Fragile Watermarking Using Gaussian Mixture Model For Malicious Image Attacks	Gopalakrishnan Thangavelu, Ramakrishnan S, Balasamy K and Muthanantha Murugavel A.S.
153	Lyapunov Features based EEG Signal Classification By Multi-Class SVM	Muthanantha Murugavel A.S., Ramakrishnan S., Gopalakrishnan T. and Balasamy K.
201	Edge Detection using Adaptive Thresholding and Ant Colony Optimization	O P Verma, Prerna Singhal, Sakshi Garg and Deepti Singh Chauhan
229	SAR Image Despeckling with Edge preservation Using Discrete Wavelet Transform	S.Md Mansoor Roomi and Kalaiyarasi D
273	Application of Genetically Optimized Neural Networks for Hindi Speech Recognition System	Rajesh Kumar Aggarwal and Mayank Dave
315	An Impact of Ridgelet Transform in Handwritten Recognition: A Study on Very Large Dataset of Kannada Script	Naveena C and Manjunath Aradhya
316	Robust Image Hashing by Downsampling: Between Mean and Median	Kannan Karthik
385	Pixel Mapping Method (PMM) Based Bit Plane Complexity Segmentation (BPCS)	Souvik Bhattacharyya and Gautam Sanyal

	Steganography	
498	Classification of brain tumors using PCA-ANN	Jainy Sachdeva
506	Contrast Enhancement by object based Brightness preserving Bi-Histogram Equalization	Manojprabu T
520	Hybrid of Wavelet and MFCC Features for Speaker Verification	Pawan Kumar and Mahesh Chandra

Day 3: 12th December 2011 Venue: Babul Hall (Seminar Hall, Ground Floor, University Department of Bio-Physics)		
2.00 PM – 4.30 PM	**Parallel Session: D3 Track: Computer Network Security (CNS) Chair: Aditya K. Ghose**	
Paper ID	**Paper Title**	**Author(s)**
101	Double Hash Function Scheme In Wireless Sensor Networks	Subash Thankamony and divya chandrasekar
148	A Rate Limiting Mechanism for Defending Against Flooding Based Distributed Denial of Service Attack	Rachana Patil and Lata Ragha
238	Security Analysis of WiMAX Network: with Misbehavior Node Attack	Rakesh Jha
288	Enhancing Performance in Adhoc Networks Using Cross Layer Designs	Anshu Chaturvedi and D N Goswami
362	Vehicle Authentication Scheme based on Random Permutation for VANET	Vighnesh Nanjangud, Kavita Rao, Shalini Urs and Srinivas Sampalli
417	IGIDS: Intelligent Intrusion Detection System Using Genetic Algorithm	Srinivasa K G
438	MCDM based Trust Model for Secure Routing in Wireless Mesh Networks	Shantanu Konwar, Amrita Bose Paul, Sukumar Nandi and Santosh Biswas
450	Exploit Detection Techniques for STP using Distributed IDS	Ankush Rai, Ferdous Barbhuiya, Arijit Sur, Santosh Biswas, Suchetana Chakraborty

		and Sukumar Nandi
500	A Hybrid Honeyfarm Based Technique For Defense Against Worm Attacks	Pragya Jain and Anjali Sardana
521	Wormhole Attacks: Performance Evaluation of On Demand Routing Protocols in Mobile Adhoc Networks	Gurjinder Kaur, V.K. Jain and Yogesh Chaba
542	Novel Authentication System Using Visual Cryptography	Anjali Sardana, Jaya, Abhinav Aggarwal and Siddharth Malik
603	Half-Duplex Bandwidth Allocation with Stations in Wireless Networks	Ilango Vasugi, Mani Ramakrishnan and Ilango Arivazhagi

Day 3: 13th December 2011 **Venue: Mahagony Hall (Conference Hall, Ground Floor, J.P.Naik Bhavan)**		
5.00 PM - 7.00 PM	**Parallel Session: A4** **Track: Networks and Computing-III** **Chair: Gauri S Mittal**	
Paper ID	**Paper Title**	**Author(s)**
84	Enhancing Web Technology through Wiki-shell Architecture	Robin Singh Bhadoria, Manish Dixit, Varun Mishra and Kuldeep Singh Jadon
161	Emerging Security Challenges in Cloud Computing	Akhil Behl
260	Ontology Exemplification for aSPOCMS in the Semantic Web	Anand Kumar and Sanjay Dwivedi
339	Duplication with Task Assignment in Mesh Distributed System	Nitin and Rashmi Sharma
346	Applying Address Selection Algorithm on Nonblocking Optical Multi-stage Interconnection Network	Nitin and Ved Prakash Bhardwaj
463	Packet Drop Reduction in Horizontal Handover	Bhavna Ambudkar and Ashwinikumar Dhande
554	Improving Attribute Based Access Control Model for Web Services	Mehdi Sabbari and Hadiseh Seyyed Alipour
576	Action Semantics in PurposeNet	Kiran Mayee
529	Augmentation of Ontology Instance Matching by Automatic Weight	Md Hanif Seddiqui, Sowmitra Das, Iqbal Ahmed, Rudra Pratap Deb Nath,

	Generation.	Masaki Aono

Day 3: 13th December 2011 Venue: Rosewood Hall (Seminar Hall 1, 2nd Floor, B Wing, University Department of Computer Science, Ranade Bhavan)		
5.00 PM - 7.00 PM	**Parallel Session: B4 Track: : ICT in Social Sector Chair: Elpida Tzafestas**	
Paper ID	**Paper Title**	**Author(s)**
158	Information & Communication Technology based Train Operation Management System for Mumbai Suburban Central Line	Hemant Kagra
192	Role of technology in education, Service Oriented Analysis and Design with Educational Information System	Kamatchi Iyer and Atanu Rakshit
226	MRI Segmentation using Entropy Maximization and Hybrid Particle Swarm Optimization with Wavelet Mutation	Arunava De, Anup Kumar Bhattacharjee, Chandan Kumar Chanda and Bansibadan Maji
374	Issues in Parsing for Machine Aided Translation from English to Hindi	Rekha Sugandhi, Ritika Shekhar, Tarun Agarwal, Rajneesh Bedi and Vijay Wadhai
403	Cloud based Model for Senior Citizens Wellness Management	Vijayalakshmi Ravi and Rekha Singhal
436	Analysis and Enhancement of QoS in Cognitive Radio Network for Efficient VoIP Performance	Tamal Chakraborty, Atri Mukhopadhyay, Suman Bhunia, Iti Saha Misra and Salil Kumar Sanyal
454	High Speed Video Transmission over Hermte Based UWB	Joanne Gomes
514	Designing a Virtual Keyboard with Multi-Modal Access for People with Disabilities	Vijit Prabhu and Girijesh Prasad
553	Effective ICTs in agricultural value chains to improve food security: An international perspective	L. J. Armstrong, D. A. Diepeveen and Niketa Gandhi

Day 3: 13th December 2011 Venue: Gulmohar Hall (Seminar Hall 2, Ground Floor, B Wing, University Department of Computer Science, Ranade Bhavan)		
5.00 PM - 7.00 PM	**Parallel Session: C4** **Track: SS3** **Chair: Mohammed Ayoub Khan**	
Paper ID	**Paper Title**	**Author(s)**
449	Analog Circuits for Gaussian Function with Improved Performance	Richa Srivastava, Urvashi Singh and Maneesha Gupta
451	Sphere based Topology: A Novel Topology for NoCs	Reza Sabbaghi, Hossein Doroud, Mahsa Ghorbanian and Amin Ghazanfari
483	Comparative design analysis of microstrip patch antennas for UWB applications.	Rukhsana Khan, Rahul Yadav, Sarita Verma and Prashant Sonare
494	Logical effort based automated transistor width optimization methodology	Satish Chandra Tiwari, Aneesh Gupta, Kunwar Singh and Maneesha Gupta
505	Hardware Implementation of Link Aggregation in Networks-on-Chip	Ievgen Korotkyi and Oleksandr Lysenko
518	Design of Microstrip Patch Antenna for Wireless Communication	Tazeen Shaikh
527	Optimization of E-Shape Antenna for Bandwidth Enhancement	Rukhsana Khan, Rahul Yadav and Dr Prashant Sonare
535	Disposition (reduction) of (negative) partial product for Radix 4 Booth's Algorithm	Manoj Sharma and Richa Verma
604	Neuro-Fuzzy Integrated System and its VLSI Design for Generating Membership Function	A.Q. Ansari and Neeraj Kumar Gupta
605	Automated Diagnosis of Coronary Heart Disease Using Neuro-Fuzzy Integrated System	A.Q Ansari and Neeraj Gupta
606	Design and development of circuit optimizer using TCl and SPECTREMDL(SPICE) interface	Satish Chandra Tiwari, Kunwar Singh and Maneesha Gupta

Day 3: 13th December 2011 Venue: Babul Hall (Seminar Hall, Ground Floor, University Department of Bio-Physics)		
5.00 PM - 7.00 PM	**Parallel Session: D4** **Track: Nature Inspired Optimization** **Chair: Millie Pant**	
Paper ID	**Paper Title**	**Author(s)**
348	FIR Band Stop filter Optimization by Improved Particle Swarm Optimization	Durbadal Mandal, Sangeeta Mandal, Sakti Prasad Ghosal, Rajib Kar, Namburi Vekata Ratna Kishore
373	Memetic Algorithm and its application to Function Optimization and Noise removal	Swapna Devi, Devidas Jadhav and Shyam Pattnaik
440	Cuckoo Search Clustering Algorithm: A novel strategy of biomimicry	Samiksha Goel, Arpita Sharma and Punam Bedi
473	RGBCA-Genetic Bee Colony Algorithm for Travelling Salesman Problem	Vikas Singh, Deepak Singh, Ritu Tiwari and Anupam Shukla
369	Application of Artificial Bee Colony Optimization for Load Frequency Control	Sneha Rathor, Deep Shekhar Acharya, Srihari Gude and Pankaj Mishra
503	Power Quality Improvement Using Optimized Passive Filter for 12-Pulse Rectifier-Chopper in LCI fed Synchronous Motor Drives	Sanjeev Singh and Bhim Singh
142	Performance Governing Factors of Biogeography Based Land Cover Feature Extraction: An Analytical Study	Lavika Goel, Daya Gupta and V.K. Panchal
502	Estimation of Effort based on Back-End Size of Business Software Using ER Model	Mishra Samaresh and Mall Rajib

Day 4: 14th December 2011 Venue: Banyan Hall (Pherozeshah Mehta Bhavan, Ground floor, University Department of Civics and Politics)		
1.30 PM - 3.30 PM	**Parallel Session: A5** **Main track: Data and Security** **Chair: Václav Snášel**	
Paper ID	**Paper Title**	**Author(s)**
115	Vitality Detection from Biometrics: State-of-the-Art	Yogendra Singh
178	Analysis on Probabilistic and Binary Datasets through Frequent Itemset Mining	Robin Singh Bhadoria, Ram Kumar and Manish Dixit
429	DCT Block Location Based Data Hiding	Omprakash Meena, Sathisha Basavaraju and Arijit Sur
485	D_EDF: An efficient Scheduling Algorithm for Real-Time Multiprocessor System	Devendra Thakor and Apurva Shah
525	Accumulation based Congestion Control Using Active Queue Management	Yashwant Singh, Brahm Deo Sah and Nitin

Day 4: 14th December 2011 Venue: Rosewood Hall (Seminar Hall 1, 2nd Floor, B Wing, University Department of Computer Science, Ranade Bhavan)		
1.30 PM - 3.30 PM	**Parallel Session: B5** **Main track: Grid and Cloud Computing (GCC)** **Chair: Nikitas Sgouros**	
Paper ID	**Paper Title**	**Author(s)**
82	A Cognitive Analysis of Load Balancing and job migration Technique in Grid	Neeraj Rathore and Inderveer Chana
285	Service Level Agreement parameter matching in Cloud Computing	Tejas Chauhan, Sanjay Chaudhary, Vikas Kumar and minal Bhise
364	Predicting Grid User Trustworthiness using Neural Network	Bhavna Gupta, Harmeet Kaur and Punam Bedi
394	Survey and Analysis of Optimal Scheduling Strategies in Cloud Environment	Mousumi Paul and Goutam Sanyal

398	A Novel Approach for Security in Cloud Computing using Hidden Markov Model and Clustering	Pardeep Kumar, Nitin, Vivek Kumar Sehgal and Durg Chauhan
399	Clouds: Concept to Optimize the Quality of Service (QOS) for Clusters	Pardeep Kumar, Nitin, Vivek Kumar Sehgal and Durg Chauhan
418	MeghaOS: Cloud based Operating System and a Framework for Mobile Application Development	Srinivasa K G
452	A Parallel Approach to Context-based Term Weighting	Silky Arora and Shampa Chakravarty
475	Challenges of Software Development on Cloud Platform	Shyam Patidar, Dheeraj Rane and pritesh jain
556	Cloud Computing to Enhance Collaboration, Coordination and Communication in the Construction Industry	Amarnath, Anil Sawhney and Uma Maheswari

Day 4: 14th December 2011 Venue: Gulmohar Hall (Seminar Hall 2, Ground Floor, B Wing, University Department of Computer Science, Ranade Bhavan)		
1.30 PM - 3.30 PM	**Parallel Session: C5 Main track: : Intrusion Detection and Forensics(IDF)/ SS2 Chair: Anjali Sardana**	
Paper ID	**Paper Title**	**Author(s)**
203	ABIDS System Using Hidden Markov Model	Nagaraju Devarakonda, Srinivasulu Pamidi and Valli Kumari V.
448	Analysis and detection of P2P botnet connections based on node behavior	Mohammad Reza Rostami, Bharanidharan Shanmugam and Norbik Bashah Idris
459	Detecting and Reducing the Denial of Service attacks in WLANs	Rajeev Singh and Teek Parval Sharma
477	Applying Watermarking For Copyright Protection, Traitor Identification And Joint Ownership: A Review	Arti Mohanpurkar and Madhuri Joshi
76	Optimal Information Organization For Web And Other Displays	Sukhamay Kundu

117	Software metrics Enhance Test data generation and Productivity measurement	Abdul Jabbar
310	Knowledge Representation using Bayesian Networks A Case Study in Web Effort Estimation	Emilia Mendes
575	Mitigating the Authentication Vulnerabilities in Web Applications through Security Requirements	Rajendra Kumar

Abstracts of Plenary talk

Knowledge Management in Process Control using Simulation and Modelling techniques

Saeid Nahavandi,
Deakin University Centre for Intelligent Systems Research Geelong, Australia

[**Abstract**] Retaining knowledge in companies often is a major challenge as there are very few formal tools available to achieve this. Capturing the appropriate knowledge about the organization on the other hand has proved to be one of the greatest barriers. This talk will highlight challenges and devise a mechanism on how this can be achieved through simulation and modelling techniques for complex engineered systems. Through real world industry case studies the concept will be demonstrated step by step, highlighting all aspects of data capture, information processing and knowledge management for key decision-making processes demonstrating their effect on a company's bottom line.

[**Biography**] Saeid is an Alfred Deakin Professor and the Director for the Centre for Intelligent Systems Research at Deakin University in Australia. Professor Nahavandi is a Fellow member of IET, IEAust and Senior Member of IEEE. He has published over 350 refereed papers and been awarded several competitive Australian Research Council (ARC) grants over the past five years and holds two patents. He actively contributes and leads four major research projects in three Cooperative Research Centers with over 50 major international companies as partners. He has carried out industry based research with several major international companies such as GM, Ford, Holden, Nissan, Bosch, Futuris, Boeing, Vestas, to name a few. Professor Nahavandi has been the chairman of eight International conferences and the General Chair for World Manufacturing Congress series and the International Congress on Autonomous Intelligent Systems. He also holds the position of Editor of the International Journal 'Intelligent Automation and Soft Computing' (South Pacific region), 'International Journal of Computational Intelligence' and Associate Editor – 'IEEE Systems Journal, International Journal of Innovative Computing & Information Control'.

Machine Intelligence, Granular Mining and Image Analysis: F-granulation, Rough-fuzzy Approach and Challenges

Sankar K. Pal,
Indian Statistical Institute, India

[**Abstract**] Different components of machine intelligence are explained. The role of rough sets in uncertainty handling and granular computing is described. The significance of its integration with other soft computing tools and the relevance of rough-fuzzy

computing, as a stronger paradigm for uncertainty handling, are explained. Different applications of rough granules, significance of f-granulation and certain important issues in their implementations are stated. Generalized rough sets using the concept of fuzziness in granules and sets are defined both for equivalence and tolerance relations. These are followed by definitions of various entropy measures. Different tasks such as case generation, class-dependent rough-fuzzy granulation for classification, rough-fuzzy clustering and defining various image ambiguity measures for mining are then addressed in this regard, explaining the nature and characteristics of granules used therein.

While the method of case generation with variable reduced dimension is useful for mining data sets with large dimension and size, class dependent granulation coupled with neighborhood rough sets for feature selection is efficient in modeling overlapping classes. Superiority of rough-fuzzy clustering is illustrated for brain MRI segmentation problem. Image ambiguity measures, which take into account both the fuzziness in boundary regions, and the rough resemblance among nearby gray levels and nearby pixels, are useful for various image analysis operations. Merits of generalization in rough sets, as well as the incorporation of the concept of rough granulation on the top of fuzziness in gray level are extensively demonstrated for image segmentation problem.

[**Biography**] Sankar K. Pal is a Distinguished Scientist of the Indian Statistical Institute and a former Director. He worked at the University of California, Berkeley and the University of Maryl, the NASA Johnson Space Center, Houston and US Naval Research Laboratory, to name a few. Since 1997 he has been serving as a Distinguished Visitor of IEEE Computer Society (USA) for the Asia-Pacific Region, and held several visiting positions in Italy, Poland, Hong Kong and Australian universities. He has received the 1990 S.S. Bhatnagar Prize, which is the most coveted award for a scientist in India and many prestigious awards in India and abroad. He is associated with many international journals including IEEE journals.

The Optimizing Web: Leveraging efficiencies from collaborative services

Aditya K. Ghose,
University of Wollongong,Australia.

[**Abstract**] We live in a world where the pressure to be more efficient has never been greater. Carbon mitigation is a key driver for this imperative, as is the need to do more with less. This talk will bring together several distinct threads of research. First, it will argue the case for leveraging formal service engineering techniques, and indeed formal computing techniques in modeling, designing, delivering and monitoring services in the most general sense. Second, it will argue that generating efficiencies from such services requires us to leverage optimization techniques, both in the design and operation of such services. Third, it will argue that piecemeal optimization is inadequate and that we must design networks of collaboratiing services to effectively maximize efficiency opportunities. These threads will be brought together in the context of the

Optimizing Web project that provides the infrastructure for large, ubiquitous networks of local optimizers to collaborate to improve solutions relative to a shared (and arguably global) objective function. This has implications for our response to the climate change challenge (where the global objective is the minimization of the carbon footprint), but also in the context of service engineering at the bottom of the pyramid.

[**Biography**] Aditya Ghose is the Professor of Computer Science at the University of Wollongong and Director of its Decision Systems Lab. He is a Research Leader in the Australian Cooperative Research Centre for Smart Services, Co-Director of the Centre for Oncology Informatics at the Illawarra Health and Medical Research Institute, Co-Leader of the University of Wollongong Carbon-Centric Computing Initiative and Co-Convener of the Australian Computer Society NSW SIG on Green ICT. He is also Vice-President of CORE, Australia's apex body for computing academics. He has also been a keynote speaker at several conferences, and program/general chair of several others. He is a senior technical advisor to several companies in the areas of constraint programming and business process management, both in Australia and Canada.

Human-Machine Interaction in Time-Critical Communications

Hideyasu Sasaki,
The Chinese University of Hong Kong, Hong Kong

[**Abstract**] Managing time-critical transactions is a challenging problem in communication systems which involve human interventions. Tracking the human-machine interaction in information communications often anticipates technical challenges derived from human misapprehensions or the limitations of human perception. This talk will commence with discussion on a well-known heuristic approach for tackling with the communication problem in human-machine systems and its limitations of applications to real practice. We then highlight a non-heuristic approach using stochastic analysis of human behavior. The introduced approach dramatically improves human-machine interaction in time-critical communications.

[**Biography**] Dr. Sasaki is an Associate Professor of Computer Science at Ritsumeikan University in Kyoto, Japan. His research interests include Human-Machine Systems, Collective Intelligence, Soft Computing and Decision Making. His primary concern is time-critical analysis on decision making. Prof. Sasaki is the founding Editor-in-Chief of International Journal of Organizational and Collective Intelligence (IJOCI), IRMA, N.J., United States. Dr. Sasaki has been awarded competitive Japan Society for Science Promotion (JSPS) grants over the past six years from the very beginning of his tenure professorship. He received the Microsoft Research Grant in 2005. Prof. Sasaki has given invited talks at renowned conferences and institutes including SPIE Defense, Security and Sensing (DSS) and The Energy and Resources Institute of India (TERI). Prof. Sasaki received his BA, LLB from the University of Tokyo, Japan, LLM from University of

Chicago Law School, MS (Hons) and PhD (Highest Hons) in Computer and Information Sciences in 1992, 1994, 1999, 2001 and 2003 respectively. He is an experienced lawyer and an Attorney-at-Law in New York since 1999.

Brain-inspired robots for social training of autistic children

Emilia I. Barakova,
Eindhoven University of Technology, Netherlands

[**Abstract**] Social robotics is a field that deals with simulating social behavior on robots with the aim of making the robots cope with the interactive aspects of autonomy while they interact with humans or another embodied autonomous agents. Due to many layers of social interaction and the complexity of the autonomous social behavior, the observed social behaviors are simulated. We aim at augmenting the social interaction behaviors with elements of brain-inspired mechanisms that cause social behavior. So far we use a combination of observed and emulated social intelligence.

Autistic children have atypical social behavior and the origin of that can be traced back to the difficulties in performing simple behaviors such as eye contact, turn taking and imitation. We use a combination of methods consisting of functional brain modeling, behavioral robotics and human centered design in social scenarios that comply to the modern therapies for autistic children such as Applied Behavioral Analysis and Pivotal Response Training. The behaviors are tested with human subjects (especially children with autism). The user group of children with autism was chosen, because they do not only benefit from the outcome of the research but also help us to generate knowledge on how social interaction is developing in typically developing and socially impaired (autistic) children. The results of the experiments with humans facilitate knowledge discovery, which results in novel robot behaviors and interaction scenarios for behavioral training.

[**Biography**] Dr. Ir. Emilia I. Barakova is affiliated with the Department of Industrial Design at the Eindhoven University of Technology, The Netherlands, and is also a Visiting Researcher at RIKEN Brain Science Institute in Japan. She has expertise in behavioral robotics and functional brain modeling based on behavioral data from mice, monkeys, and humans. Currently, she is working on human-robot social interaction, robotics for behavioral training of autistic children and on prediction of conflicts in social groups, which includes use of machine learning and brain-inspired computational models to create robot interactive behaviors and human-centered design to design interactive scenarios that are based on advanced therapeutic practices. She has worked with many research institutes worldwide and is associated with many international journals.

Constraints and Effects of Partner Selection on the Emergence of Structures in Social Environments

Elpida Tzafestas,
University of Athens, Greece

[**Abstract**] This work explores spatial and social dynamics and clashes in social simulations involving partner selection. It considers three different social settings: (a) a modified Axelrod cultural simulation model extended with a Moore neighborhood, heterogeneous sets of cultural features per agent and a number of psychologically realistic, basic and more advanced, conceptual models of cultural affinity perception and imitation, (b) a proto-imitation model where agents imitate unconditionally those they happen to interact with because perceived external signals are replicated impulsively without associating with objects of reference, and (c) a model of social noisy IPD interaction with an additional attraction mechanism that makes agents unconditionally cooperative toward attractive opponents. In all these models, a simple mechanism of partner selection has been found to modify the social environment by allowing different types of social structures to emerge, for example fast built cultural homogeneous groups in the case of cultural simulation or groups or interacting cooperative agents that are attracted by one another in the case of IPD with attraction. We identify a number of cognitive factors that are used to model partner selection, namely memory depth, learning speed and openness, and how they relate to both the type of the social environment at hand (all-to-all, networked ot grid-based) and the phenomena obtained. We finally discuss how these factors may be studied and taken into account when designing complex sociotechnical systems.

[**Biography**] Elpida Tzafestas is an Associate Professor of Artificial Intelligence at the University of Athens, Greece. She finished her Electrical and Computer Engineering degree from TU, Athens, M.Sc. and Ph.D. on Artificial Intelligence (Univ. Paris VI, France). She has been a senior researcher in the Institute of Communication and Computer Systems (NTU, Athens). She has been the principal investigator in numerous national and European R&D projects and has authored over eighty articles in journals, books and conference proceedings, at least half of them as a single author. She serves on several editorial boards and is frequent reviewer for journals, conferences and research grants. Her research interests lie on the intersection of biological, complex and cognitive systems and their application to intelligent human-computer interaction, logistics and sustainable development.

Using metalearning for technique recommendation

Andre de Carvalho,
University of Sao Paulo, Brazil

[**Abstract**] One of the main challenges for the use of intelligent techniques to solve real problems is the selection of the most suited technique. Metalearning allows the use

of learning algorithms for the recommendation of the techniques with the best potential to provide a good model.

In this talk I will discuss how metalearning can support the development of intelligent systems by recommending the most promising intelligent techniques. Real problems will illustrate the usefulness of using metalearning.

[**Biography**] Prof. André C. Ponce de Leon F. de Carvalho is a Full Professor in the Department of Computer Science, University of Sao Paulo, Brazil, He received his B.Sc. and M.Sc. degrees in Computer Science from the Universidade Federal de Pernambuco, Brazil. He received his Ph.D. degree in Electronic Engineering from the University of Kent, UK. He has published around 80 Journal and 200 Conference refereed papers. He has been involved in the organization of several conferences and journal special issues. His main interests are Machine Learning, Data Mining and Hybrid Intelligent Systems. He is in the editorial board of several journals and was a member of the Brazilian Computing Society, SBC, Council. He was the editor of the SBC/Elsevier textbook series until July 2011.

Sensors and sensor networks in health, food safety and quality detection

Gauri S. Mittal,
Systems Engineering at the School of Engineering, University of Guelph, Guelph, Ontario, Canada

[**Abstract**] Various sensors and sensor fusion are presented in this talk based on our research at the University of Guelph. These sensors and networks were developed to sense health, and food safety and quality. Various techniques such as image processing, impedance spectroscopy, signal processing, near-infrared, audio signals, and ultrasound and microwave pulses were used.

Using image processing and impedance, sensing system was developed to detect crack and internal quality of egg for grading, respectively. The image processing algorithm, for the detection of cracks on the exterior of the egg, was designed to capture the image from 10 MP camera, identify and extract egg shape from the background, and then perform edge detection functions on the extracted image. The edge detection functions, Sobel & Canny, look for discontinuities in image brightness on the edge surface and returned a binary matrix of pixels where 1's are identified as edges and 0's as non-edges. Any egg surface produces more than zero edges is classified as a cracked egg. 100% accuracy was obtained. A resonant LC circuit was used for internal egg quality detection. It detected capacitance changes at high sensitivity which is related with the egg quality. This can also be used in detecting fruit ripeness and moisture content of baked goods. The talk also discusses experiments to detect bone and plastic pieces in ground beef and pork, extraneous matter in wet products, such as cheese etc.

[**Biography**] Prof Gauri S. Mittal is the Professor of Systems Engineering at the School of Engineering, University of Guelph, Guelph, Ontario, Canada. He is an author of

more than 250 refereed journal research papers and 210 other publications, as well as three books. He is the recipient of the 1994 John Clark Awar, the 1994 Membro Benemerito Award, International Best Researcher award 2005 & 2007 by Japanese Association of Food Machinery Manufacturers, and Fellow (2010) of Canadian Society of Bioengineering. A registered professional engineer, professor Mittal received the B.Sc. (Engg.) (1969) from India, M.Sc. (1976) from the University of Manitoba,Canada, and the Ph.D. (1979) from the Ohio State University, Columbus, USA.

Social Network Analysis

Václav Snášel,
VŠB - Technical University of Ostrava, Czech Republic.

[**Abstract**] The analysis of social networks is concentrated mainly on uncovering hidden relations and properties of network nodes (vertices). Most of the current approaches are focused mainly on different network types and network coefficients. On one hand, the analysis can be relatively simple and on the other hand more complex approaches to network dynamics can be used. In this lecture we introduce a novel social network analysis based on the so-called Forgetting Curve and Ant Colony Optimization (ACO) algorithm. We analyse a co-authorship network and identify two types of ties among its nodes. The Forgetting Curve and ACO are used to model the dynamics of such a network.

One of the most relevant features of social networks is the community structure. Since these networks are typically very complex, it is great interest to reduce these networks to much simpler. Clustering and low dimensional representation of high dimensional data are important problems in many diverse fields. In recent years various spectral methods to perform these tasks, based on the eigenvectors of adjacency matrices of graphs on the data have been developed. One of the successful models is based on theory of diffusion equation. It is closely related to Schrodinger's Equation for a free particle. The diffusion equation is used for measure of diffusion distance. We apply diffusion distance for social network partitioning.

[**Biography**]: Vaclav Snasel's research and development experience includes over 25 years in the Industry and Academia. He works in a multi-disciplinary environment involving artificial intelligence, multidimensional data indexing, conceptual lattice, information retrieval, semantic web, knowledge management, data compression, machine intelligence, neural network, web intelligence, data mining and applied to various real world problems. He has given more than 10 plenary lectures and conference tutorials in these areas. He has authored/co-authored several refereed journal/conference papers and book chapters. He has published more than 400 papers He is the editor I chief of two journals and is actively involved in international conferences. Presently he is the full professor and dean for Research and Science at

Faculty of Electrical Engineering and Computer Science, VSB-Technical University of Ostrava, Czech Republic. He received Ph.D. degree in Algebra and Geometry from Masaryk University, Brno, Czech Republic and a Master of Science degree from Palacky University, Olomouc, Czech Republic.

Means of Expression, Rendering and Analysis of Collective Reactions in Social Interaction Environments

Nikitas Sgouros,
University of Piraeus, Greece.

[**Abstract**] In recent years the development of a multitude of environments for social interaction has provided unprecedented opportunities for mass participation in social activities on a global scale. Participation in social action can take many forms from well-structured dialogues such as those taking place in scientific conferences to spontaneous crowd reactions similar to those occurring in sports or mass entertainment venues. Our research focuses on the creation of methods for expression, rendering and analysis of collective reactions in social activities. Collective in this context refers to a number of reactions with similar content, referring to the same situation and posted by a significant number of people at approximately the same point in time. We examine the types of such reactions and propose a number of rendering methods that take into account their magnitude, persistence and the aesthetics of the environment they appear in. We also describe analysis tools for tracking the emergence and evolution of such phenomena and discovering their causes. Finally, we propose methods by which the results of this analysis can be used in the creation of richer and more engaging social interaction experiences.

[**Biography**] Professor Nikitas M. Sgouros holds a PhD in Computer Science from Northwestern University, USA (1994) a M.Sc. in Artificial Intelligence from the University of Edinburgh, UK (1990) and a Diploma in EECS from the National Technical University of Athens, Greece (1988). Currently, he is the Professor in the Department of Digital Systems at the University of Piraeus, Greece. His main research interests include multimedia systems, artificial intelligence and entertainment computing. Dr. Sgouros has participated in a number of national and EU research projects. He is the author of more than 50 publications in scientific journals and conferences.