

Table of Contents

Message from the Chairs.....	xv
Organizing Committee.....	xvi
Program Committee.....	xvii
Keynotes.....	1

Regular Papers

Algorithms, Theory of computing, and Theoretical computer science

Incremental Labeling in Closed-2PM Model.....	9
<i>F. Rostamabadi and M. Ghodsi</i>	
Extended Gradient: A Modified Gradient Algorithm for Node Placement in Shufflenet Network.....	14
<i>M. H. Yaghmaee and A. A. Neghabi</i>	
Revisiting Decision Trees for Large Set of Keys.....	20
<i>A. Fatholahzadeh</i>	
Improved Laplacian Eigenmaps.....	25
<i>A. Baghani and B. Nadjar Araabi</i>	
Maintaining Visibility Polygon of a Moving Point Observer in Polygons with Holes.....	32
<i>A. Zarei, A. A. Khosravi and M. Ghodsi</i>	
Heuristic-Based Genetic Algorithm for Graph Coloring Problem.....	40
<i>S. Amizadeh, F. Rastegar, A. Rahimi-Kian and C. Lucas</i>	
Level Compressed Tries for Longest Prefix Matching With Minimum Number of Nodes for a Given Maximum Height.....	45
<i>T. Björklund, A. Brodnik and J. Nordlander</i>	
Constructing School Timetables Using Tabu Reward Algorithm.....	51
<i>M.H. Dezfoulian, S. Zoroufi-Houshmand, S. Mohammadpour and H. Bagheri</i>	

Computer Architecture

Reduced Area Low Power High Throughput BCD Adders for IEEE 754r Format.....	59
<i>H. Thapliyal, H. R. Arabnia and M.B. Srinivas</i>	
A Novel Implementation of Radix-4 Floating-Point Division/Squareroot Using Comparison Multiples.....	65
<i>H. Nikmehr, B. Phillips and C. Chew Lim</i>	
Parallel Merged Multiplier-Accumulator Coprocessor Optimized for Audio Filters.....	73

H. Parandeh-Afshar and S.M. Fakhraie

A Fault-Tolerant Approach to Embedded-System Design Using Software Standby Sparing	77
<i>M. Modarressi, H. Javanhemat, S. G. Miremadi, S. Hessabi, M. Najafvand, M. Gudarzi, and N. Mohamadzadeh</i>	

VLSI and Digital/Analog Circuit Design

A Flash File System to Support Fast Mounting and Reliability in NAND Flash Memory.....	87
<i>S. Park, T. Kim, J. Lee and K. Chung</i>	
Evolving an MPEG2 Processor from A JPEG Object-Oriented ASIP: A Case Study on a System-Level Design Methodology.....	92
<i>N. Mohammadzadeh, S. Hessabi and M. Goudarzi</i>	
Automatic Generation of Pausible Clock Based GALS Wrapper Circuits	98
<i>E. Amini, M. Najibi and H. Pedram</i>	
Evaluating the Partitioning of GALS Systems Using Abstract System Level Modeling	103
<i>S. M. Hosseini, M. Najibi, K. Saleh and H. Pedram</i>	

Parallel, Distributed, Cluster, and Grid Computing

ENP: Using Neighborhood Computing in Service Providing.....	113
<i>A. Talaei-Khoei and M. Kazem Akbari</i>	
Relaxing Logging Atomicity in Pessimistic Logging for Fault Tolerant MPI.....	117
<i>M. Aminian, M. K. Akbari and B. Javadi</i>	
Greedy-Available Non-Contiguous Processor Allocation Strategy and Job Scheduling for 2D Mesh Connected Multicomputers.....	122
<i>S. Bani-Mohammad, M. Ould-Khaoua, I. Ababneh and L. M. Mackenzie</i>	

Security and Cryptography

Applying Genetic Algorithms for Minimization Analysis of Network Attack Graphs	133
<i>M. Abadi and S. Jalili</i>	
Algebraic Cryptanalysis of Kahkeshan Block Cipher	140
<i>Y. Esmaeili S. and T. Eghlidos</i>	
A Neuro-Fuzzy Classifiers For Intrusion Detection Systems	146
<i>A. Nadjaran Toosi and M. Kahani</i>	
Modeling and Verification of Complex Network Attacks Using an Actor-Based Language	152
<i>H. R. Shahriari, M. Sadegh Makarem, M. Sirjani, R. Jalili and A. Movaghar</i>	

Computer Education and Information Technology

Meteoric: An Efficient Micro-Payment System Based on Prompt and Light-Weight Cryptographic Operations	161
<i>M. R. Sohizadeh Abianeh, M. Salmasizadeh and J. Mohajeri</i>	
m-Commerce Implications on Customer Loyalty in Mobile Telecommunication Companies.....	167
<i>N. Abdolvand, R. Mohammadi and N. Moghadam</i>	
Multi-Agent Investment Management with Emotional Learning	175
<i>S. Naseri, C. Lucas and M. Nili Ahmadabadi</i>	
A Hybrid Three Layer Architecture for Fire Agent Management in Rescue Simulation Environment.....	181
<i>J. Habibi, A. Geramifard and P. Nayeri</i>	

Image and Video Processing

Evaluating the Effect of Watermarking on Analysis of Functional Magnetic Resonance Images	189
<i>G. A. Hossein-Zadeh, M. Khajehnejad, M. R. Ghajar, F. Etezadi and M. Karzand</i>	
Wavelet Based Image Denoising With Mixture Laplace Model	194
<i>H. Rabbani and M. Vafadoost</i>	
Fast Block Motion Estimation Algorithm Based on Sorting of Prediction Vectors	202
<i>S. M. R. Soroushmehr, S. Samavi and S. Shirani</i>	
Restoration of a Single Motion Blurred Image	206
<i>J. Safaei and M. Jamzad</i>	

Signal and Speech Processing

Application of HMM Adaptation and Robust Features to Sub-Band Speech Recognition In Noise.....	215
<i>B. Nasersharif, A. Akbari and M. M. Homayounpour</i>	
A New Bidirectional Neural Network for Lexical Modeling and Speech Recognition Improvement	220
<i>M. R. Yazdchi, S. A. S. Salehi, F. Almasganj and R. Zafarani</i>	
A Gaussian Mixture Model Training Optimization Method for Text Independent Speaker Verification	227
<i>H. R. Sadegh Mohammadi and R. Saeidi</i>	
Beam Forming of Small-Size Microphone Arrays for Audio Applications	231
<i>S. Mohammad Makki and M. T. Manzuri-shalmani</i>	
Background Noise Control for Speech Enhancement Applications	236
<i>M. Rahmani, R. Abdipour, A. Akbari and B. Ayad</i>	
Two-Dimensional Recursive Adaptive Matching Pursuit Filter.....	240
<i>M. Shams Esfandabadi and A. Mahloojifar</i>	

Fuzzy Systems and Applications

Preemptive Scheduling of Soft Real-Time Tasks Using Fuzzy Logic.....	249
<i>M. Sabeghi, M. Naghibzadeh and T. Taghavi</i>	
Identifying Duplicate Records by Using Estimation of Distribution Algorithms to Learn the Semantics	255
<i>S. Haidarian, C. Lucas and B. N. Araabi</i>	
A New Classification Approach Using Fuzzy Association Rules	263
<i>A. Tajbakhsh, A. Mirzaei and M. Rahmati</i>	
Pardis: A Fuzzy Extension to Multiagent Simulation Systems	271
<i>R. Hesamifard, V. M. Hashemi, S. Ramezani and S. Bagheri Shouraki</i>	
Adaptive Neighborhood Control in the Fuzzy Kohonen Clustering Network.....	278
<i>V. Haghighatdoost, R. Safabakhsh</i>	

AI and Applications

A Note on the Population Based Incremental Learning with Infinite Population Size	289
<i>R. Rastegar and M. R. Meybodi</i>	
Solving Constrained Continuous Optimization Problems with GCACOII.....	296
<i>M. Eftekhari, M. R. Moosavi and S. Katebi</i>	
A More Informative Heuristic Function for Fast Forward Planning	303
<i>E. Soroush, S. A. Akramifar and G. R. Ghassem-Sani</i>	
Reducing Scan-Based Test Power Using Genetic Algorithm.....	308
<i>M. Salmani Jelodar and A. Aavani</i>	
A Neural Network Model of Conscious and Unconscious Conflict Processing.....	313
<i>A. Sohrabi, R. L. West and A. Brook</i>	
Situation Modelling for Ambient Intelligence: Towards Scenario-Based Methodology and Formal Representation of Context	321
<i>A. A. Nazari Shirehjini and J. Movahed</i>	
Linear Combination of Neural Networks Using Particle Swarm Optimization.....	329
<i>S.H. Nabavi-Kerizi, M. Abadi and E. Kabir</i>	
Centralized vs. Noncentralized Decisionmaking in Multiagent Environment.....	334
<i>J. Habibi and P. Nayeri</i>	

Computer Networks

Smooth Bandwidth Allocation Using Multiple State Decision Mechanism.....	341
<i>A. Reza Shams Shafiqh and M. Analoui</i>	

The Correlation of Topology Awareness, Message Delivery Efficiency and Redundant Traffic in P2P Networks.....	346
<i>H. Rostami and J. Habibi</i>	
Flow Driven Routing in Ad Hoc Sensor Networks	351
<i>H. Mousavi, H. Chiniforooshan, M. E. Rafiei and M. Ghodsi</i>	
Providing Local Event Services to CORBA Collocated Components.....	357
<i>M. Sharifi and H. Momeni</i>	
A More Secure Authentication Protocol for GSM.....	361
<i>M. Karimiyan Mohammadabadi and H. Shahriar Shahhoseini</i>	

Performance Evaluation and Analysis

Analysis of Multi-Cluster Computing Systems with Processor Heterogeneity	369
<i>B. Javadi, M. K. Akbari and J. H. Abawajy</i>	
Pipelined Circuit Switching: A New Fault-Tolerant Mathematical Model in Torus	377
<i>F. Safaei, A. Khonsari, M. Fathy and M. Ould-Khaoua</i>	
Dynamic Routing of Real-Time Jobs among Parallel EDF Queues: A Performance Study.....	385
<i>M. Kargahi and A. Movaghar</i>	
A New Approach to Model Virtual Channels in Interconnection Networks	393
<i>N. Alzeidi, A. Khonsari, M. Ould-Khaoua and L. Mackenzie</i>	

Pattern Recognition and Feature Extraction

Evaluation of Skeletonization Methods for Arabic/Farsi Handwriting Recognition	403
<i>M. M. Haji and S. D. Katebi</i>	
A Novel Neural Network Structure for Feature Extraction	409
<i>A. Mirzaei, M. Rahmati and R. Safabahsh</i>	
Object Recognition: Computational Theories and Models.....	415
<i>R. Ebrahimpour, M. R. Yousefi, H. Esteky and E. Kabir</i>	
Face Detection Based on Information Theoretic Tools	423
<i>E. Fazl Ersi, J. S. Zelek and H. R. Abrishami</i>	

Internet and Web

A New Light Weight and Scalable Testbed for Semantic Web Services Composition.....	433
<i>S. Hassas Yeganeh, J. Habibi, H. Rostami and H. Abolhassani</i>	
OHPD: Optimized Hybrid Proportional Delay Scheduler for Proportional Differentiated Services.....	438

A. Broumandan and N. Yazdani

Context-Aware Semantic Web Service Brokering	443
<i>Y. Ganji Saffar and H. Abolhassani</i>	
Pre-Compression Algorithm for Link Structure of the Web.....	451
<i>A. Mahdian, H. Khalili and M. Ghodsi</i>	
Improving IR Performance Using Intelligent Query Expansion.....	456
<i>K. Sheykh Esmaili, M. Neshati and H. Abolhassani</i>	

Miscellaneous

SEPID: The Simple Enhanced Process for Interactive Systems Development.....	465
<i>M. M. Jaghoori, S. H. Mirian-Hosseiniabadi and H. Sheikhveisi</i>	
A Fast and Robust Parser Based On the Viterbi Algorithm.....	473
<i>N. Montazeri, G. Ghassem-Sani and H. Sameti</i>	
Sampling Large Database for Association Rules without Candidate Generation.....	479
<i>M. Deypir and M. H. Sadreddini</i>	
Automated Software Design Using Descriptive Design Knowledge.....	483
<i>M. Afsharchi and B. Homayounfar</i>	
Near Neighborhood Allocation (NNA): A Novel Dynamic Data Allocation Algorithm In DDB	489
<i>R. Basseda, S. Tasharofi and M. Rahgozar</i>	
Tracing Anonymous Packets to their Sources: Based on Packet Marking	494
<i>S. Jalili and M. Aslam Khan</i>	

Poster Papers

Knowledge management for Decision Support.....	505
<i>A. Karbor, F. Arab Sheibani and M. R. Khojasteh</i>	
An HMM/GMM-Based Traffic Scene Analysis.....	508
<i>H. Sadoghi Yazdi, M. Lotfizad, M. Fathy and E. Kabir</i>	
Using Description Logics for MAN in the Middle Attack Analysis	512
<i>R. Zakeri, R. Jalil, and H. R. Shahriari</i>	
New Schemes to extend the Availability of NAND Flash File System.....	516
<i>T. Lee, J. Lee, and K. Chung</i>	
An Online Profiling-Based Dynamically Adaptable Processor.....	520
<i>H. Noori, N. Yoshimatsu, Y. Fujii, K. Eshima, M. Yoshida, T. Soga, T. Hayashida and K. Murakami</i>	
Semi-Human Instinctive Artificial Intelligence (SHI-AI).....	524
<i>S. M. Mohammadzadeh Ziabary and A. Norouzi</i>	

Binary image document Authentication and Change Location Detection Based on Run Length	528
<i>M. lesani and M. Jamzad</i>	
Fuzzy Trust in Semantic Web Social Networks.....	532
<i>M. Lesani, S. Bagheri and H. Abolhasani</i>	
An Efficient non-contiguous Processor Allocation Scheme in Mesh-Connected Multicomputers	536
<i>A. Haghghat, S. Jalili and S. Attari</i>	
A Survey of Intelligent Agents for User Modeling on the WEB and Modeling the User Behavior in Question Answering System	541
<i>M. Panahiazar, J. Habibi and M. Karimzadegan</i>	
SOBM: Service-Oriented Business Modeling.....	546
<i>K. Saghafi, R. Mohamadkhani and F. Ravaei</i>	
Extended Neural Mass Model for Integrated Modeling of EEG/MEG and fMRI.....	551
<i>A. Babajani and M. H. Nekooei and H. Soltanian-Zadeh</i>	
Combining the Information Retrieval Evaluation Measures by Lp-Norm for Fuzzy Rule Evaluation.....	555
<i>M. Eftekhari, G. H. Yaghoobi and S.D. Katebi</i>	
A Level-based Practical Parallel Algorithm for Huffman Encoding.....	559
<i>S. A. Ostadzadeh, B. M. Elah, M. A. Moulavi and Z. Zeinalpour</i>	
Intrusion Detection Using a Boosting Ant-Colony-Based Data Miner	563
<i>E. Soroush, J. Habibi and M. Saniee Abadeh</i>	
Network Survivability Performance Evaluation in Wireless Sensor Networks	567
<i>R. Azarderakhsh, A.H. Jahangir and M. Keshtgary</i>	
Priority Extraction Using Delayed Rewards in Multi Systems: A Case Study in RoboCup	571
<i>H. Shahbazi and R. Zafarani</i>	
Pervasive Computing for Web based Psychomotor Education.....	575
<i>B. Ramadoss and S.R. Balasundaram</i>	
Introduction of a Nero-Genetic Fuzzy Controller for the Sub-Optimized Path-Tracking of ROVs	580
<i>H. Kashani, A. Afshar Tehrani, M. Fathy and A. Rahmani</i>	
A New Framework for Network Layer Based User Modeling.....	584
<i>K. Mizanian, R. Zakeri and M. Analoui</i>	
Prefetching L1 Data Cache Misses.....	588
<i>A. Mahjur and A.H. Jahangir</i>	
A Parallel Algorithm for Reconstruction of B-tree Structure after Substantial Key Removals.....	592
<i>S. Arash Ostadzadeh, Z. Zeinalpour and M. Amir Moulavi</i>	
Active Discovery: Information Gathering in Active Networks.....	596
<i>P. Teymoori and T. Ramezani Farkhani</i>	
Formal Representation and Verification of Fuzzy Object Design Using UML.....	600
<i>P. Teymoori and T. Ramezani Farkhani</i>	
An Adaptive Fair Distributed Scheduling Algorithm for QoS Support in IEEE 802.11e Wireless Networks.....	604
<i>S. Montazeri, R. Berangi and M. Fathy</i>	

A Genetic Algorithm for Horizontal Fragmentation to Reduce Network Traffic	609
<i>K. Izadi and M. Haghjoo</i>	
Runtime Validity of Dynamic Reconfiguration in Component-based Programs	613
<i>M. Niமானesh, F. Heydarian Dehkordi and R. Jalili</i>	
Throughput Improvement in Resilient Packet Rings with Total Rate Control	618
<i>S. Khorsandi, A. Shokrani and I. Lambadaris</i>	
Unsupervised Persian Morphemes Discovery: An Improved Approach.....	624
<i>M. Arabsorkhi and M. Shamsfard</i>	
A Real-Time Multiple Face racking method in Natural Environments	628
<i>R. Iraji and M. T. Manzuri</i>	
A Comparative Study of DTD-Independent XML Data Storage Approaches.....	634
<i>M. Emadi, M. Rahgozar, A. Ardalan, A. Kazerani and M. M. Ariyan</i>	
Flexibility in Negotiation Systems: An Argumentation-based Approach.....	638
<i>M. R. Ayatollahzadeh Shirazi and A. Abdollahzadeh Barfouroush</i>	
Application of Dezert-Smarandache Theory of Paradoxical Reasoning in PLIR Systems	643
<i>A. Vazifedoost, A. Bayati, M. Rahgozar and F. Oroumchian</i>	
An Analysis on a Threat Model of BGP Networks and the Effects of Using TCP-MD5 Signatures to Mitigate the Level of Risk	647
<i>K. Agahian, A. Malik Abusin and A. Bostan</i>	
Evolutionary Approach to Efficient Scheduling in Broadband Wireless Access Systems	651
<i>H. S. Alavi, M. Amoui, N. Yazdani and C. Lucas</i>	
Ethics and professional issues – An international view	655
<i>R. N. Zobel</i>	
Application of colour image processing techniques on identification of rental hard exudate	659
<i>A. Osareh and B. Shadgar</i>	
Feature Watermarking in Digital Documents for Retrieval and Authentication.....	663
<i>N. Sadat Mirsattari, P. Haghani and M. Jamzad</i>	
Applications of Adjusted Probabilistic Broadcasting in MANETs.....	667
<i>M. Bani Yassein, M. Ould-Khaoua, L. M. Mackenzie and S. Papanastasiou</i>	

IRANET Workshop Papers

Ant-Aodv Hybrid Routing Protocol In Manet.....	673
<i>R. Ghazali, A. Movaghar</i>	
Round-Trip Time Aware “Modified New Reno TCP”	679
<i>M. Analoui and S. Jamali</i>	
Using Wavelet Bases in Combination with RLS for Prediction of Network Traffic with Complex Correlated Structure.....	684
<i>M. Vasef and M. Fathy</i>	

Quality of Service Support in Wireless Sensor Networks Middleware.....691
M. Alkaee Taleghan, A. Taherkordi and M. Sharifi

AOSE Workshop Papers

Mobile Agents.....699
A. Tayebi

**Applying the JADE Multi-Agent System Development Methodology for the Integration of Operational Tasks in
Chemical Plants707**
M. Nikraz and P. A. Bahri

Author Index 715