## **Table of Contents**

## Full Papers

## Learning/Soft Computing

A Novel Piecewise Linear Clustering Technique Based on Hyper Plane
Adjustment
Ant Colony Optimization with a Genetic Restart Approach toward Global Optimization
Automatic Extraction of IS-A Relations in Taxonomy Learning  Mahmood Neshati, Hassan Abolhassani, and Hassan Fatemi
A Bayesian Network Based Approach for Data Classification Using Structural Learning
A.R. Khanteymoori, M.M. Homayounpour, and M.B. Menhaj  A Clustering Method Based on Soft Learning of Model (Prototype) and Dissimilarity Metrics
Algorithm and Theory (1)
An Approximation Algorithm for the k-Level Uncapacitated Facility Location Problem with Penalties
Optimizing Fixpoint Evaluation of Logic Programs with Uncertainty
Nematollaah Shiri and Zhi Hong Zheng  Approximating Component Selection with General Costs  Mostafa Nouri and Jafar Habibi
Online Suffix Tree Construction for Streaming Sequences
Fuzzy Voronoi Diagram
SoC and NoC
A Novel Partitioned Encoding Scheme for Reducing Total Power Consumption of Parallel Bus
Mehdi Kamal, Somayyeh Koohi, and Shaahin Hessabi



Efficient Parallel Buffer Structure and Its Management Scheme for a Robust Network-on-Chip (NoC) Architecture	98
Integration of System-Level IP Cores in Object-Oriented Design Methodologies	106
Polymorphism-Aware Common Bus in an Object-Oriented ASIP	115
Efficient VLSI Layout of WK-Recursive and WK-Pyramid Interconnection Networks	123
Wireless/Sensor Networks	
Energy Adaptive Cluster-Head Selection for Wireless Sensor Networks Using Center of Energy Mass  Ehsan Akhtarkavan and Mohammad Taghi Manzuri Shalmani	130
SHRP: A New Routing Protocol to Wireless Sensor Networks	138
Improvement of MAC Performance for Wireless Sensor Networks  M.H. Fotouhi Ghazvini, M. Vahabi, M.F.A. Rasid, and R.S.A. Raja Abdullah	147
Route Optimization Security in Mobile IPv6 Wireless Networks: A Test-Bed Experience  Abbas Mehdizadeh, S. Khatun, Borhanuddin M. Ali, R.S.A. Raja Abdullah, and Gopakumar Kurup	153
Adaptive End-to-End QoS for Multimedia over Heterogeneous Wireless  Networks	160
A Blocking Reduction Scheme for Multiple Slot Cell Scheduling in Multicast Switching Systems	168
Video Processing and Related Topics	
Object-Based Video Coding for Distance Learning Using Stereo Cameras	176
Amir Hossein Khalili, Mojtaba Bagheri, and Shohreh Kasaei	

## Algorithm and Theory (2)

An Exact Algorithm for the Multiple-Choice Multidimensional Knapsack Based on the Core	275
Kinetic Polar Diagram	283
A Graph Transformation-Based Approach to Formal Modeling and Verification of Workflows	291
Efficient Parallel Routing Algorithms for Cartesian and Composition Networks	299
AI/Robotics/Control	
A Naïve Bayes Classifier with Distance Weighting for Hand-Gesture Recognition	308
SBUQA Question Answering System	316
A New Feedback ANC System Approach	324
Benefiting White Noise in Developing Feedforward Active Noise  Control Systems	332
Medical Image Processing	
Comparison of Linear and Nonlinear Models for Estimating Brain Deformation Using Finite Element Method	340
Context-Dependent Segmentation of Retinal Blood Vessels Using Hidden Markov Models	348

Table of Contents	XIII
Retinal Vessel Extraction Using Gabor Filters and Support Vector Machines	356
A New Segmentation Method for Iris Recognition Using the Complex Inversion Map and Best-Fitting Curve	364
P2P, Cluster, and Grid Systems	
A New Algorithm for Combating Free-Riders in Structured P2P Networks	372
Clustering Search Engine Log for Query Recommendation  Mehdi Hosseini and Hassan Abolhassani	380
Reliability Evaluation in Grid Environment	388
Formulating Priority Coefficients for Information Quality Criteria on the Blog	396
A Distributed Proxy System for High Speed Clients	404
Mobile Ad Hoc Networks	
New Routing Strategies for RSP Problems with Concave Cost	412
Modeling Routing Protocols in Adhoc Networks	419
CEBAC: A Decentralized Cooperation Enforcement Based Access Control Framework in MANETs	427
A Secure Cross-Layer Design of Clustering-Based Routing Protocol for MANET	435
Web	
An Approach for Semantic Web Query Approximation Based on Domain Knowledge and User Preferences	443

Semantic Web Services for Handling Data Heterogeneity in an	.=.
E-Business Framework	453
Challenges in Using Peer-to-Peer Structures in Order to Design a  Large-Scale Web Search Engine	461
Signal Processing/Speech Processing	
Sparse Sinusoidal Signal Representation for Speech and Music Signals	469
Variant Combination of Multiple Classifiers Methods for Classifying the EEG Signals in Brain-Computer Interface	477
Nevisa, a Persian Continuous Speech Recognition System	485
Effects of Feature Domain Normalizations on Text Independent Speaker Verification Using Sorted Adapted Gaussian Mixture Models	493
A Centrally Managed Dynamic Spectrum Management Algorithm for Digital Subscriber Line Systems	501
Misc.	
Methods for Analyzing Information Contained in an Enterprise Email  Database	509
Early Bug Detection in Deployed Software Using Support Vector Machine	518
A New Architecture for Heterogeneous Context Based Routing Enrico Dressler, Raphael Zender, Ulrike Lucke, and Djamshid Tavangarian	526
Performance Modeling of a Distributed Web Crawler Using Stochastic Activity Networks	535

Table of Contents	XV
Performance Comparison of Simple Regular Meshes and Their k-ary n-cube Variants in Optical Networks	543
Seyed Hasan Seyed Razi	
Security	
A Robust and Efficient SIP Authentication Scheme	551
A Temporal Semantic-Based Access Control Model	559
A Review on Concepts, Algorithms and Recognition-Based Applications of Artificial Immune System	569
Incremental Hybrid Intrusion Detection Using Ensemble of Weak Classifiers	577
A Cluster-Based Key Establishment Protocol for Wireless Mobile Ad Hoc Networks	585
Time Series Analysis for ARP Anomaly Detection: A Combinatorial Network-Based Approach Using Multivariate and Mean-Variance	EAR
Algorithms	593
Image Processing Applications	
Polyhedral GPU Accelerated Shape from Silhouette	601
Discrimination of Bony Structures in Cephalograms for Automatic  Landmark Detection	609
Grid Based Registration of Diffusion Tensor Images Using Least Square Support Vector Machines  Esmaeil Davoodi-Bojd and Hamid Soltanian-Zadeh	621

Detection of Outer Layer of the Vessel Wall and Characterization of Calcified Plaques in IVUS Images	62
Alireza Roodaki, Zahra Najafi, Armin Soltanzadi, Arash Taki, Seyed Kamaledin Setarehdan, and Nasir Navab	
Object Modeling for Multicamera Correspondence Using Fuzzy Region Color Adjacency Graphs	63
Secure Digital Image Watermarking Based on SVD-DCT	64
VLSI	
A Novel Delay Fault Testing Methodology for Resistive Faults in Deep Sub-micron Technologies	65
On the Importance of the Number of Fanouts to Prevent the Glitches in DPA-Resistant Devices	66
Performance Enhancement of Asynchronous Circuits	67
A Low Power SRAM Based on Five Transistors Cell	67
Evaluating the Metro-on-Chip Methodology to Improve the Congestion	0.0
and Routability	68
Sequential Equivalence Checking Using a Hybrid Boolean-Word Level Decision Diagram	69
A Circuit Model for Fault Tolerance in the Reliable Assembly of	
Nano-Systems	70
Short Papers	
An Operator for Removal of Subsumed Clauses	71

Low Power and Storage Efficient Parallel Lookup Engine Architecture for IP Packets	718
Assignment of OVSF Codes in Wideband CDMA	723
Toward Descriptive Performance Model for OpenMosix Cluster Bestoun S. Ahmed, Khairulmizam Samsudin, Abdul Rahman Ramli, and ShahNor Basri	728
Analysis of the Growth Process of Neural Cells in Culture Environment Using Image Processing Techniques	732
Bandwidth-Delay Constrained Least Cost Multicast Routing for Multimedia Communication	737
Cellular Probabilistic Evolutionary Algorithms for Real-Coded Function Optimization	741
A New Approach for Scoring Relevant Documents by Applying a Farsi Stemming Method in Persian Web Search Engines	745
FRGA Matching Algorithm in High-Speed Packet Switches	749
A New Class of Data Dissemination Algorithms for Multicast Protocols	754
Dynamic Point Coverage in Wireless Sensor Networks: A Learning Automata Approach	758
A Novel Approach in Adaptive Traffic Prediction in Self-sizing Networks Using Wavelets	763
Simulative Study of Two Fusion Methods for Target Tracking in Wireless Sensor Networks	769

The Advantage of Implementing Martin's Noise Reduction Algorithm in Critical Bands Using Wavelet Packet Decomposition and Hilbert
Transform
Real-Time Analysis Process Patterns
Selecting Informative Genes from Microarray Dataset Using Fuzzy Relational Clustering
GMTM: A Grid Transaction Management Model
Design of a Custom Packet Switching Engine for Network
Applications
Multiple Robots Tasks Allocation: An Auction-Based Approach Using Dynamic-Domain RRT
Efficient Computation of N-S Equation with Free Surface Flow Around an ACV on ShirazUCFD Grid
Enhancing Accuracy of Source Localization in High Reverberation Environment with Microphone Array
Class Dependent LDA Optimization Using Genetic Algorithm for Robust MFCC Extraction
TACtic- A Multi Behavioral Agent for Trading Agent Competition
Software Reliability Prediction Based on a Formal Requirements Specification
ID-Based Blind Signature and Proxy Blind Signature without Trusted
PKG

Table of Contents	XIX
The Combination of CMS with PMC for Improving Robustness of Speech Recognition Systems	825
A Dynamic Multi Agent-Based Approach to Parallelizing Genetic Algorithm	830
Fuzzy Neighborhood Allocation (FNA): A Fuzzy Approach to Improve Near Neighborhood Allocation in DDB	834
OPWUMP: An Architecture for Online Predicting in WUM-Based Personalization System	838
Artificial Intelligent Controller for a DC Motor	842
A Multi-Gb/s Parallel String Matching Engine for Intrusion Detection Systems	847
A Modified Version of Sugeno-Yasukawa Modeler	852
Directing the Search in the Fast Forward Planning	857
A Dynamic Mandatory Access Control Model	862
Inferring Trust Using Relation Extraction in Heterogeneous Social Networks	867
Sorting on OTIS-Networks	871
A Novel Semi-supervised Clustering Algorithm for Finding Clusters of Arbitrary Shapes	876
Improving Quality of Voice Conversion Systems	880
Feature Selection SDA Method in Ensemble Nearest Neighbor Classifier	884

A Novel Hybrid Structure for Clustering	888
6R Robots; How to Guide and Test Them by Vision?	892
Hierarchical Diagnosis of Vocal Fold Disorders	897
A Voronoi-Based Reactive Approach for Mobile Robot Navigation Shahin Mohammadi and Nima Hazar	901
Evaluation of PersianCAT Agent's Accepting Policy in Continuous Double Auction, Participant in CAT 2007 Competition	905
A Framework for Implementing Virtual Collaborative Networks – Case Study on Automobile Components Production Industry	909
Virtual Collaboration Readiness Measurement a Case Study in the Automobile Industry	913
Facilitating XML Query Processing Via Execution Plan	917
The Impact of Hidden Terminal on WMNet Performance	921
Design and Implementation of a Fuzzy Accident Detector	926
Approximation Algorithms for Edge-Covering Problem	930
A Novel Crosstalk Estimator after Placement	934
A New Operator for Multi-addition Calculations	938
Quantum Differential Evolution Algorithm for Variable Ordering Problem of Binary Decision Diagram	942
A Joint Source-Channel Rate-Distortion Optimization Algorithm for H.264 Codec in Wireless Networks	946
Turing In Italian, and Monathing Changer	

Table of Contents	XXI
Pre-synthesis Optimization for Asynchronous Circuits Using Compiler Techniques	951
Absolute Priority for a Vehicle in VANET	955
An Ontology Based Routing Index in Unstructured Peer-to-Peer Networks	960
Two Architectural Practices for Extreme Programming	964
Adaptive Target Detection in Sensor Networks	968
Linear Temporal Logic of Constraint Automata	972
Using Social Annotations for Search Results Clustering	976
Event Detection from News Articles	981
Architectural Styles as a Guide for Software Architecture Reconstruction	985
Best Effort Flow Control in Network-on-Chip	990
Prevention of Tunneling Attack in endairA	994
Digital Social Network Mining for Topic Discovery	1000
Towards Dynamic Assignment of Rights and Responsibilities to Agents (Short Version)	1004
Finding Correlation between Protein Protein Interaction Modules Using Semantic Web Techniques	1009
Author Index	1013