## 2015 International Conference on Computational Intelligence and Communication Networks (CICN 2015)

Jabalpur, India 12-14 December 2015

Pages 1-806



**IEEE Catalog Number: ISBN:** 

CFP1527L-POD 978-1-5090-0077-7

## Copyright $\odot$ 2015 by the Institute of Electrical and Electronics Engineers, Inc All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

\*\*\*This publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.

 IEEE Catalog Number:
 CFP1527L-POD

 ISBN (Print-On-Demand):
 978-1-5090-0077-7

 ISBN (Online):
 978-1-5090-0076-0

ISSN: 2375-8244

#### **Additional Copies of This Publication Are Available From:**

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-0400

Fax: (845) 758-2633

E-mail: curran@proceedings.com Web: www.proceedings.com



# 2015 International Conference on Computational Intelligence and Communication Networks

### **CICN 2015**

#### **Table of Contents**

Welcome from CICN 2015 General Chairs ......xxix

Welcome from CICN 2015 Program Chairs	XXX
Conference Committees	xxxii
Track-A: Microwave Theory, Integrated Circuits, and Components	MW
Analysis of Noise of Sensors Mounted on a Submerged Cylindrical Shell Using Waveguide FE/BE Method	1
Chinsuk Hong, Weui Bong Jeong, Byung Kyoo Jung, Ku-Kyun Shin, and Jungsoo Ryue	
Circular Sierpinski Fractal Antenna for Multiband Wireless Applications  Deepa Dubey, Jagdeesh Ahirwar, Deepak Dekate, and Zohaib Hasan	5
Design and Simulation a Novel 4×1 Micro Strip Patch Array for Satellite  Applications	9
Design of Microstrip Low Pass Filter with Defected Ground Structure	12
Design of UWB Antenna for Short Distance Wireless Communication System	16
Gain and Directivity Enhancement of Reconfigurable Antenna Array Using DGS	20
Reena Panwar and Deepak Bhatia	
Implantable Antennas in Biomedical Applications	25
Microstrip Antenna's Impedance Analysis Using Different ANN Training Algorithms: Comparative Study	30
Sonali Shankar, Bishal Dey Sarkar, Himanshu Chaurasiya, and Sanjeev Thakur	

Near-Field Two-Dimensional Synthetic Aperture Microwave Imaging Based on Compressed Sensing	24
Chao Sun, Baoping Wang, and Yang Fang	
One Dimensional Numerical Analysis of High Temperature Microwave Heating	
Hematite	39
Qi Li, Qi Wang, Yue Zhang, Maoqi Guan, and Biao Yang	
RFID Tag Impendance Matching techniques: A Survey	44
U-Shape Ground Defected Monopole Antenna for UWB Applications	46
Track-B: Wireless Networks, MANET, VANET and Sen Networks	sor
A Novel Scalable Hybrid-MAC Protocol for Densely Deployed M2M Networks	50
Pawan Kumar Verma, Rajesh Verma, Arun Prakash, Rajeev Tripathi, and Kshirasagar Naik	
A Survey on Middleware Challenges and Approaches for Wireless Sensor  Networks	56
K. Lingaraj, Rajashree V. Biradar, and V.C. Patil	
Adaptive Routing Protocol Based on Forwarding Angle in VANETs	61
An Adaptive H-ARQ Strategy Based on the Types of Business in Aerospace	
Information Network	67
Manman Zhang, Weiqiang Wu, and Qinyu Zhang	=0
An Advanced Power Control Algorithm Based on PHR in LTE-A PUSCH	72
An Intelligent Approach for Bearing Fault Diagnosis Based on Bayesian	
Networks and Alpha-Stable Distribution	76
Gang Yu and Lazhuan Zhang	
An NS3 Implementation of Physical Layer Based on 802.11 for Utility  Maximization of WSN	79
Sunil Kumar, Priya Ranjan, R. Radhakrishnan, and Malay Ranjan Tripathy	
Analysis of DSDV, OLSR and AODV Routing Protocols in VANETS Scenario: Using NS3	85
Tushar Singh Chouhan and Rajvardhan Somraj Deshmukh	
Analysis of Effect of Network Load Variation on the Performance of Various	
Routing Protocols for the Random Way Mobility Model	90

Cyber Physical System Using Intelligent Wireless Sensor Actuator Networks for Disaster Recovery	95
Ramasamy Mariappan, P.V. Narayana Reddy, and Chang Wu	90
Energy Efficiency of Wireless Network Using Balance Routing	100
Enhanced Distributed Multi-Hop Clustering Algorithm for VANETs Based on Neighborhood Follow (EDMCNF) Collaborated with Road Side Units	106
Linear Regression Based Energy Aware Location-Aided Routing Protocol for Mobile Ad-Hoc Networks	114
Localization Technique for Lost Node in Geo-Location	122
Locally Linear Embedding for Node Localization in Wireless Sensor Networks	126
Improve the Spatial Reuse Using Directional Medium Access Control Protocol	131
Minimizing Skew in MapReduce Applications Using Node Clustering in Heterogeneous Environment	136
Network Architecture for Distributed Computation in Wireless Sensor Networks	140
Optimal Route Searching in Networks with Dynamic Weights Using Flow Algorithms	146
Sunit Singh, Ram Prasad Joshi, and Harsh Kohli	
Problems of Developing Parallel S of Complex Architecture Based on GPGPU Techno Hybrid Fluid-Based Model of Internet Traffic in Computer Networklogy	450
and their Solutions	150
Reliability Analysis of Mobile Ad Hoc Network	161
Routing Algorithm for Energy Conservation in MANET	165
Software Aspects of WSN for Monitoring in an Indian Greenhouse	168
SSLSM: Signal Strength Based Link Stability Estimation in MANETs	173
Strategies for the Immobilization of Bacteriophages Applied in the Biosensors	178

Study on Mine Communication Network Based on Ethernet and WSN  Zhang Changsen and Mao Yan	183
Terrestrial Localization by Using Angle of Arrival Measurements in Wireless Sensor Network	188
Ankita Vijay Tondwalkar and Preetida Vinayakray-Jani	
The Research of the Route Protocols in Opportunistic Network	192
Visual Monitoring System Using Simple Network Management Protocol	197
Wheel Detection Based Level Crossing Safety System	201
Wireless Sensor Network Specific Voltage Scaling Based Energy Efficient Circuit Design for Cyclic Redundancy Check	207
Paresh Khaneja, Shivani, Priya Dhiman, Bhavna Jain, and Shikha Sharma	
Zigbee Based Centralised Patient Monitoring System	212
Track-C: Image Processing, Medical Imaging and Applications	Bio Medical
A Hybrid Facial Feature Optimisation Approach Using Bezier Curve	218
A Hybrid Image Compression Technique for Medical Images	222
A Novel Approach for Detecting the Tumor Size and Bone Cancer Stage Using Region Growing Algorithm	228
C. Kishor Kumar Reddy, P.R. Anisha, and G.V.S. Raju	
A Novel Approach for Detection and Tracking of Vehicles Using Kalman Filter	234
A Novel Method for Seizure Detection in Intracranial Eeg Recordings	237
A Systematic Study of Well Known Histogram Equalization Based Image  Contrast Enhancement Methods  Pritee Singh Rajpoot and Amit Chouksey	242
A Thresholding-Based Salt and Pepper Noise Removal Using B-Spline	
Interpolation in MRI Images	246
Figlu Mohanty, Suvendu Rup, and Bodhisattva Dash	
Akkhara-Muni: An Instance for Classifying PALI Characters	252

An Efficient and Robust Gender Classification System	254
An Efficient Face Detection and Recognition Method for Surveillance	262
An Efficient Method of Shadow Elimination Based on Image Region Information in HSV Color Space	268
An Image Denoising Technique Using NAFSM with Evolutionary Algorithm	272
An Online 3D Printing Portal for General and Medical Fields	278
Application of FCM Clustering on AM-FM to Detect MRI Disease Progression for Multiple Sclerosis	283
Application of Segmentation Methodology for Extracting MRI Brain Tumor Duly  Mitigating the Noise	288
Ariyaka: A PALI Alphabet Recognition Script	293
Automatic Fish Recognition and Counting in Video Footage of Fishery  Operations	296
Comparative Study of Noise Removal Algorithms for Denoising Medical Image Using LabVIEW	300
Sambit Satpathy, Mohan Chandra Pradhan, and Subrat Sharma  Comparing Score Level and Feature Level Fusion in Multimodal Biometric	
Identification Using Iris and Palmprint Traits with Fractional Transformed  Energy Content	306
Sudeep D. Thepade, Rupali K. Bhondave, and Ashish Mishra  Comparison of Classification Methods with Second Order Statistical Analysis	
and Wavelet Transform for Texture Image Classification	312
Comparison of Second Order Statistical Analysis and Wavelet Transform  Method for Texture Image Classification	318
Denoising of a Mixed Noise Color Image Using New Filter Technique	324
Detection of Glass Chips in Liquid Injection Based on Computer Vision	329

Techniques	
C. Kishor Kumar Reddy, G.V.S. Raju, and P.R. Anisha	
Eastern Arabic Numerals: A Stand out from Other Jargons	
Extraction, Identification and Regeneration of Source Audio Signal Using HHT and SVM	
Sonali Sen	
Facial Expression Recognition under Partial Occlusion Based on Gabor Filter  and Gray-Level Cooccurrence Matrix	
Rui Li, Pengyu Liu, Kebin Jia, and Qiang Wu	
GBVS Based 1D and 2D Barcodes Localization in Complex Scene	
Heart Rate Variability Detection in Arrhythmia	
High Speed and Area Efficient Discrete Wavelet Transform Using Vedic  Multiplier	
Satyendra Tripathi and Ashutosh Kumar Singh	
High Throughput Regular Expression Matching Algorithm	
Image Laplace Denoising Based on Sparse Representation	
Image Matching Algorithm Based on Improved Harris	
Inhalt Based Video Recuperation System Using OCR and ASR Technologies	
Intelligent Crossover and Mutation Technique to Control Bloat for Breast	
Cancer Diagnosis	
Kernelized Iterative Hashing for Image Retrieval392  Qin Bing, Zha Yu-Fei, Li Xiao-Hui, Liang Bing-Bing, Dong Shou-Ping, and Tian Jun	
Lossless Image Compression Using Differential Pulse Code Modulation  and its Application	
Mth Order FIR Filtering for EEG Denoising Using Adaptive Recursive Least  Squares Algorithm	

MOOC on Biomedical Engineering for Latin American Students–Unleashing the Potential of Virtual Learning	405
Ricardo L. Armentano and Parag Chatterjee	
Numeral Gesture Recognition Using Leap Motion Sensor	411
Numerical Simulation of Drag Coefficient for Particle Cluster Settling	415
Object Detection and Tracking – A Survey	418
Palm Print Recognition Using Hough Transforms	422
Recognition of Faces Using Discriminative Features of LBP and HOG  Descriptor in Varying Environment	426
Removal of Obstacles in Devanagari Script for Efficient Optical Character  Recognition	433
Robust Non-Local Total Variation Image Inpainting	437
Sleep EEG Staging Based on Hilbert-Huang Transform and Sample Entropy	442
Statistical Approach for Determination of ECG Markers	446
Tagging Face Using Feature Based Face Detection	452
The Research on the Feature Extraction of Sunflower Leaf Rust Characteristics Based on Color and Texture Feature  Di Penghui, Lv Fang, and Wang Xue	457
Tracking Human Intrusion through a CCTV	461
Translator of Specific Movie Subtitles Based on E-C Translation of ASTM  Specifications under Network Environment  Jing Hu	466
Un-Supervised MRI Segmentation Using Self Organised Maps	471
Improved Hyperspectral Image Denoising Employing Sparse Representation	475

## Track-D: Signal Processing, Communication Systems and Standards

5G - A near Future: Prerequisites	481
Sonali Shankar, Bishal Dey Sarkar, Himanshu Chaurasiya, and Sanjeev Thakur	
A Discussions on the Least-Square Method in the Course of Error theory and Data Processing  Haotian Chi	486
A New Set of Spreading Codes for Synchronous CDMA System	490
An Improved ICI Cancellation Method to Reduce the Impact of Frequency Offset in OFDM Systems	496
Analysis of Non Stationary Data Signals Using Hilbert Haung Transform	502
Based on Kalman Filtering of Vehicle Motion Acquisition and Record  Han Chenghao and Li Hao	508
Bi-Objective Inducing Optimal Paths Recommendation Algorithm Based on Time Schedule	511
Distributed Hierarchical Control Plane of Software Defined Networking  Prashant D. Bhole and Dinesh D. Puri	516
Duty Cycle Based Digital Multiplexing Technique for Advanced  Communication System	523
Implementation of Cyclic Redundancy Check in Data Communication	529
Iterative ICI Cancellation in MIMO OFDM WiMAX System with LDPC Channel  Coding  Monika Cheema and Sukanya A. Kulkarni	532
Maximizing Packet Throughput of Cognitive Radio Networks through Secondary User Power Constraints	537
A Novel RAIM Scheme in Single Constellation Based on Receiver Clock  Auxiliary	543
Fanchen Meng, Siyuan Tan, Shan Wang, and Bocheng Zhu	
New Techniques to Enhance the Performance of Stand-Alone GNSS  Positioning	548

Performance Analysis of MIMO-WiMAX System Using Space Time Block	F.F.0
Codes	553
Performance Analysis of Spectrum Sensing of Cognitive Radio under Different	
Fading Environment	558
Ravi Yadav and Sandeep Kumar Agrawal	
Power Allocation in OFDM-CR Using Accelerated Gradient Descent Algorithm	562
Quality Analysis of Cognitive Radio Networks Based on Modulation  Techniques	566
Jyotshana Kanti, Ashish Bagwari, and Geetam Singh Tomar	
Research on Adaptive Transmission Mechanism of Video Data	570
Research on the Digital Dielectric Loss Measuring Technology Based on IEEE1588	574
Lv Qishen, Xiang Dongdong, Huang Ronghui, and Yao Senjing	
The Stability Analysis for Predictive M-LWDF Scheduling Alg, in M-WiMAX	579
The Transformation of Continuous Transfer Function in Discrete	585
Track-E: Computational Intelligence, Machine Learning and System Optimisation	
A Survey of Software Protection Methods Based on Self-Modifying Code	589
Anatomy and Utilities of an Artificial Intelligence Conversational Entity	594
Application of Computational Intelligence to Predict Churn and Non-Churn of Customers in Indian Telecommunication	598
Application Research of an Efficient Communication Method in the Wind-Turbine Vibration Monitoring System Based on Socket Protocol	604
Blue Brain - The Magic of Man	607
Meet Gidwani, Anand Bhagwani, and Nikhil Rohra	
Chaos Phase Space Reconstruction Based on Symbolic Analysis and Multi-Component Conditional Entropy	612
	612

Design and Achieve the Chinese Voice Learning System Based on Intelligent	0.4=
Computer	617
Design and Implementation Material Database of Foreign Language Teaching  Based on Intelligent Computer Technology  Jianming Dong	622
Design of Optimization of Diaphragm Chamber Based on Finite Element  Method	627
Xue-Qin Ling, Yan-Lin Zhang, and Wei Zhang	
Intelligent Coordinate Registration Method for Computer-Assisted Surgery	630
Joint Source-Channel Coding for First-Order Hidden Markov Source	635
Optimal Search Algorithm for H.264 Based on UMHexagonS	639
Ostentatious Adoption of Hand Gestures for Intelligent HCI	643
Performance of Frequency-Hopped QPSK Receivers with Partial-Band Interference	649
Haiyan Liu and Hongkang Mu	
Phoenix: A Self-Optimizing Chess Engine	652
Research on Fast Hot-Start Algorithm for Combined BDS and GPS Receiver	658
Research on Foreign Language Voice System Based on Computer Telephony Integration	663
Wei-Feng Geng	
Sentiment Analysis of English Tweets Using Rapid Miner	668
Simulation Analysis on Effect Factors of Long-Range Anti-Ship Missile's  Target Acquisition Probability	673
Zhang Jianqiang and Liu Zhong	
SoS Architecture Alternatives Tradespace Modeling and Computable  Experimentation: A Framework with System Engineering Thinking  Zhifei Li, Yifan Zhu, and Feng Yang	677
Speech Enhancement Using Feedback Particle Filter	682
Speech Recognition Using Probabilistic and Statistical Models	686

Speech Recognition Using Supervised and Unsupervised Learning  Techniques	691
Amber Singh and R.S. Anand	
Suspects Polygraph Test System Based on Intelligent Computer and Medical Technology  Limei Fu	697
The Semi-Automatic Natural Language Processing System Construction  Method Based on Intelligent Computer and Word Net Technologies  Jing Hu	702
Use of Haar Features and Multi-Layer Perception to Support Connectivism	707
Use of Multiple Classifier System for Gender Driven Speech Emotion  Recognition	713
Track-F: Data Mining, Cloud Computing, Big Data and Networks	Social
A Comprehensive Study on Complexity of Relationship in Social Networks	718
A New Genetic Type Method with Integrated Gradient Based Algorithm  Method for Storage Optimization of Supply Chain	724
A Review on Costing Issues in Big Data Analytics	727
A Robust Algorithm for Capacity Management to Improve Response Time in Virtualized Data Centers	731
A Survey on Different Techniques for Information Resource Scheduling in Cloud Computing	736
An Algorithm for Finding the Reduct and Core of the Consistent Dataset	741
An Analytical Study of Component-Based Life Cycle Models: A Survey  Deepti Negi, Yashwant Singh Chauhan, Priti Dimri, and Aditya Harbola	746
An Efficient Distributed Approach for Load Balancing in Cloud Computing	751
An Improved Method for K-Means Clustering	756

Analysis of Probabilistic Model for Document Retrieval in Information Retrieval	760
Analysis of Soil Behaviour and Prediction of Crop Yield Using Data Mining  Approach	766
Monali Paul, Santosh K. Vishwakarma, and Ashok Verma	
Analysis of TF-IDF Model and its Variant for Document Retrieval	772
Approach to Enhancing Concurrent and Self-Reliant Access to Cloud  Database: A Review	777
Vivek Waghmare, Kaveri Gojre, and Akshaya Watpade	
Big Data Analytics Using Public Cloud Infrastructure: Use Cases and Cost  Economics	782
Sanjay Deshmukh and Shailja Sumeet	
Cloud Based Big Data Analytics a Review	785
Clustering on Big Data Using Hadoop MapReduce	789
Comparative Study of Tools and Techniques for Cloud Services QoS  Performance Management	796
Constraint Based Filtering for Incremental Data Mining	801
Cost and Communication Efficient Auditing over Public Cloud	807
Data Classification Using Feature Selection and kNN Machine Learning  Approach	811
Shemim Begum, Debasis Chakraborty, and Ram Sarkar	
Design and Development of a Universal Verification System for Satellite Data  Management System Based on AOS	815
Xiaona Wei, Lu Tian, Zhao Hao, Chunsheng Zhang, and Shuangling Li	
Design and Implementation of Distributed Data Collection Management  Platform	820
Gong Xiao Mei and Cao Jian Ping	
Diagnosability of Bubble-Sort Graph Networks under the Comparison  Diagnosis Model	823
Yunxia Ren and Shiying Wang	
Discovery of Certain Association Rules from an Uncertain Database  Terrence Shebuel Arvind and Vivek Badhe	827

Distributed Cloud Computing Based GIS Solution for Electrical Power Utility	
Asset Management	832
Musti K.S. Sastry and Andy Sahadeo	
Efficient & Accurate Scheduling Algorithm for Cloudera Hadoop	839
Swati Yadav, Santosh Vishwakarma, and Ashok Verma	
Efforts toward Research and Development on Inconsistencies and Analytical  Tools of Big Data	845
Ravindra Kumar Yadav and Khan Atiya Naaz	
Elective Recommendation Support through K-Means Clustering Using R-Tool	851
Fast Estimation for the Long Data Chain by the Spring Force Model	857
GSQueRIE: Query Recommendation Using Matrix Factorization	862
Harnessing Big Data for Wireless Body Area Network Applications	868
Heterogeneity-Based Files Placement in Hadoop Cluster	876
High Performance Computing Cluster System and its Future Aspects in Processing Big Data	881
C. Kishor Kumar Reddy, K.E. Bala Chandrudu, P.R. Anisha, and G.V.S. Raju	
Infrastructural Assets Provisioning in Cloud Computing Systems	886
Taxonomy on the Integration of Hadoop and Rapid Miner for Big Data  Analytics	890
Meghna Utmal and R.K. Pandey	
Intelligent Health Perception System Based on Cloud Computing	894
Internet of Thing Based Home Appliances Control	898
Internet of Things for a Smart and Ubiquitous eHealth System	903
Interoperability Issues and Standard Architecture for Service Delivery in Federated Cloud: A Review	908
IOT-type Cloud Online Real-Time Multi-Car Localization and Communication  System	012
Wen-Tsai Sung, Tsung-Hsien Chuang, Jui-Ho Chen, and Kuo-Yi Chang	دا قع

Knowledge Based Retrieval Scheme from Big Data for Aviation Industry	918
Mathematical Modeling of Virtual Relation in Social Networks	924
Message Passing Clustering Technique: A Review	929
Mining Negative Association Rules in Distributed Environment	934
Optimization of Multiple Queries for Big Data with Apache Hadoop/Hive	938
Point Cloud De-Noising Based on Three-Dimensional Projection	942
Power Aware Artificial Bee Colony Virtual Machine Allocation for Private Cloud  Systems	947
Profit Association Rule Mining with Inventory Measures	951
Research on Lossless Compression Technique Basing on Running-Data of Nuclear Power Plant	956
Video Conferencing System Using Private Cloud Computing Technology  Feifei Feng and Wei Wang	960
Soil Moisture Estimation in Chambal Irrigation Command of Rajasthan Based on Radarsat-1 Multi-Incidence Angle Data and SAR-optical Synergy	964
Study of Smart Home System Based on Cloud Computing and the Key  Technologies  Lin Yuan	968
The Application of a Presented Hybrid BFGS-Based Method for Data Analysis in Automation System	973
The Cloud Task Attemper Layer Model Based on Agent Role	977
The Research of Teradata Data Warehouse Technology	982
Towards Conceptual MapReduce Algorithm for Big Data Platform	985

User Rating and Synonyms Based Modified Ranking Technique	
for Recommender Systems	989
Anamika Rajput and Sushil Kumar Chaturvedi	
Track-G: Cryptography, Steganography, Network and Information Security	
A Modified Combination Rule to Conflict Evidence for Dempster-Shafer Theory	993
A New Hybrid Algorithm to Eliminate Wormhole Attack in Wireless Mesh Networks	997
Tapodhir Acharjee, Pinky Borah, and Sudipta Roy	
A New Method for Detecting Users Behavior from Web Access Logs  Deepti Sahu and Rishi Soni	1003
A New Modified Playfair Algorithm Using CBC	1008
A Novel Approach to the Selection of Representative Skyline Web Services  Dai Gang and Cai Chunli	1013
A Novel Hierarchical Detection Method for Enhancing Anomaly Detection  Efficiency  Eunhye Kim and Sehun Kim	1018
A Study on Information Security Emergency Plan Management System Based on ASP.NET	1023
Xue Lv, Bensheng Yang, Wenquan Yao, and Rongjun Jiang	
A Survey on Intrusion Detection Techniques in MANET	1027
An Immunology-Based Security System Model for Authorization	1033
An Unsupervised Signature Generation Approach to Detect Email Bombing Using DBSCAN Clustering	1038
Analysis of Encryption Dgrp-Data Gather Routing Protocol Based on Opnet in VANETs	1046
Audio Watermarking Technique to Resist Desynchronization Attacks  B. Divakara Reddy and N.V. Lalitha	1052
Bit Level Encryption Algorithm–Implementation of Bit-Wise Operations and Randomized Bit-Wise Columnar Transposition Method	1057

Campus Network Security Analysis and Design of Security System	1064
Classifying Iris Image Based on Feature Extraction and Encryption Using Bio-Chaotic Algorithm (BCA)	1068
Rashmi M. Mhatre and Deeksha Bhardwaj	
Data Compression and Hiding Using Advanced SMVQ and Image Inpainting	1074
Detection of Mailbomb Attacks Base on Time Interval Temporal Logic	1078
Dynamic Id Based Remote User Authentication in Multi Server Environment Using Smart Cards: A Review	1081
Efficient Method for Intrusion Detection and Classification and Compression of Data	1085
Aniket G. Bombatkar and T.J. Parvat	
A Novel Approach for Enhancing Data Storage Capacity in Quick Response  Code Using Multiplexing and Data Compression Technique  Mona M. Umaria and G.B. Jethava	1091
Enhancing the Data Storage Capacity in QR Code Using Compression Algorithm and Achieving Security and Further Data Storage Capacity Improvement Using Multiplexing	1094
Mona M. Umaria and G.B. Jethava	
Governance Practices and Critical Success Factors Suitable for Business Information Security	1097
Yuri Bobbert and Hans Mulder	
Hiding User Privacy in Location Base Services through Mobile Collaboration	1105
Hybrid Cryptography for Malicious Behavior Detection and Prevention System for MANETs	1108
Shreyas S. Jathe and Vidya Dhamdhere	
Implementation of Present Cryptographical Algorithm for the Encryption of Messages in NETFPGA 1G	1115
Improved Detection of 1-2-4 LSB Steganography and RSA Cryptography	
in Color and Grayscale Images	1120
Suchi Goyal, Manoj Ramaiya, and Deepika Dubey	
Improoved MANET Security Using Elliptic Curve Cryptography and EAACK	1125

New Secured Steganography Algorithm Using Encrypted Secret Message inside QRTM Code: System Implemented in Android Phone	1130
Sayantan Majumdar, Abhisek Maiti, and Asoke Nath	
Performance Analysis of Secure Unified Communications in	
the VMware-Based Cloud	1135
Reversible Data Hiding in Cloud Based Applications	1141
Secret Sharing Using 3 Level DWT Method of Image Steganography Based on Lorenz Chaotic Encryption and Visual Cryptography	1147
Secure Link Establishment Method to Prevent Jelly Fish Attack in MANET	1153
Secure Query Processing Using Open Source GMAP of API	1159
Securing the Clustered Database Using Data Modification Technique	1163
Security Analysis of ECC Based Authentication Protocols	1167
Steganography Based Secret Image Sharing Using Block Division Technique	1173
Synthesis and Simulation of FPGA Based Hardware Design of RC4 Stream  Cipher	1177
Pradeep J. Sonawane and Umesh S. Bhadade	
The Research of the Network Security Situation Prediction Mechanism Based on the Complex Network	1183
The Threat of Obfuscated Zero Day Polymorphic Malwares: An Analysis  Brightstarlang Wanswett and Hemanta Kumar Kalita	1188
Vanet Based Privacy-Preserving Navigation Scheme with Replica Server	1194
A Secure Data Hiding Method Based on Patched Reference Table and Pixel  Value Differencing Technique	1199
vverznen zhan zixuan Beno vvien Bono Mellin Unen and Danni vven	

# Track-H: Fuzzy systems, Soft Computing, Neural Networks and Optimisation Algorithms

A Dynamic Supervisory Mechanism of Process Behaviors Based on Dalvik VM	1203
A Fuzzy Driven Reliability and Relevancy Map for Web Content Search Optimization	1211
Ankita Halwasia and Monika Sharma	
A Graphical User Interface, Fuzzy Based Intelligent Rice Cooker	1216
A Structured Timing Itinerary Using an Augmented Swarm Intelligent Algorithm  Deblina Das and S. Natarajan	1221
An Improved Strategy of PSO for Solving Multimodal and Higher Dimensional  Complicated Optimization Problems	1229
An Interior Point Method for Large Scale Linear Feasibility Problems	1235
Application of BP Neural Network in Monitoring of Ocean Tide Level	1238
Automatic Brain MRI Classification Using Modified Ant Colony System and Neural Network Classifier	1241
Comparison of Fuzzy Logic and Neuro Fuzzy Controller for Shunt Active  Power Filter	1247
Kishore Kumar Pedapenki, S.P. Gupta, and Mukesh Kumar Pathak	
Constrained Optimization Problems Solving Using Evolutionary Algorithms: A Review	1251
P.D. Sheth and A.J. Umbarkar	1201
Design of Fuzzy Controller for Temperature of Bag Filter	1258
Exploited Differential Evolution Algorithm	1261
Improved G.A. Using ABC	1270
Infrared Image Segmentation for Power Equipment Failure Based on Fuzzy Clustering and Wavelet Decomposition  Junpeng Wu, Yan Wang, Juan Lou, and Min Li	1274
Magnetic Localization of the Queen Bee in the Hive	1278

Modified Fuzzy C Means with Optimized Ant Colony Algorithm for Image	4000
Segmentation	1283
Multi-Objective Artificial Bee Colony Algorithm	1289
Yanjiao Wang and Yaojie Li	1200
Neuro Fuzzy Based Controller for Power Quality Improvement	1294
Short Term Wind Power Generation Forecasting Using Adaptive  Network-Based Fuzzy Inference System	1299
Stock Forecasting Model Based on Combined Fuzzy Time Series and Genetic  Algorithm	1303
Ajeeta Sachdev and Vivek Sharma	
The Application of Analytic Hierarchy Process and Neural Network in the Sustainability Analysis of Country	1308
Vehicle Scheduling in Parking Station with Modified Cycle Crossover GA	1312
Generation of Minimal Hitting Sets for Multiple Fault Diagnosis Based on Enhanced Discrete Differential Evolution Algorithm	1316
Enhancement in Time Efficiency and Expected Capacity of F5 Algorithm	1321
Track-J: Digital Design, VLSI and Fabrication Concepts	
A Prediction Model for Stored Grain Pests Based on Cellular Automaton	1325
Automation System for Material Handling Unit of 10MeV Electron Beam Linear  Accelerator	1331
Designing of Power Efficient ROM Using LVTTL and Mobile-DDR IO Standard on 28nm FPGA	1334
Tarun Agrawal, Vivek Srivastava, and Anjan Kumar Fabrication of Micro-Hole Arrays in Silicon Using Femtosecond Laser	
Irradiation and Acid Etching	1338
A Comparative Analysis on Different IO Standards Based Energy Efficient  Visitor Counting Machine Design	1341

Modelling and Performance Analysis of Various CMOS Applications Based	
on Recent Technologies	1345
Himen Sidhpura, Nisarg Dave, and Darshanaupadhyay	
Replicating an Energy Efficient Human Brain Using 40nm FPGA Technology	1350
Research on Fiber Optic Gyroscope Adaptive Filtering Algorithm Based on FPGA	1354
Bo Lin, Xiaqing Tang, and Xiangyuan Huang	
RSTVL: A Sound Abstract Memory Model for Program Static Analysis	1358
Simulation and Verification of Voltage and Capacitance Scalable 32-bit Wi-Fi Ah Channel Enable ALU Design on 40nm FPGA	1363
Shivangni Singh, Madhavika Agarwal, Neha Agrawal, Anjan Kumar, and Bishwajeet Pandey	
VDHL Implementation of Viterbi Algorithm for Decoding of Convolutional Code	1367
Track-K: Web Services, Ontology and Algorithms	
A Novel Visualization for Ontologies of Semantic Web Representation	1371
A Survey on Feature Selection Techniques for Internet Traffic Classification	1375
Classification of Web Pages as Evergreen Or Ephemeral Based on Content	1381
Combining Attributes and Links: Finding Homepage for Entity Searching  Junsan Zhang, Haoliang Sun, Qinghua Lu, and Aiyan Zhang	1386
Decoupling Replication from the World Wide Web in Redundancy	1391
Dynamic HTTP Live Streaming Method for Live Feeds	1394
Evaluation and Verification of HCI Design of University Webpage Based on Eye-Tracking Technology	1399
Zhen Li, Pei Zhang, Kun Tan, and Tong Xu	
Framework for Distributed Semantic Web Crawler	1403
Provenance Constraints and Attributes Definition in OWL Ontology to Support  Machine Learning	1408
Mrinal Pandey and Rajiv Pandey	

Research on Incremental Heterogeneous Database Synchronization Opdate	4445
Based on Web Service	1415
	4400
Semantic Similarity Based Video Reranking	1420
Semi-Supervised Autoencoder: A Joint Approach of Representation	
and Classification	1424
Wu Haiyan, Yang Haomin, Li Xueming, and Ren Haijun	
User Oriented Approach to Website Navigation Concept Using Mathematical	
Model	1431
Shalaka S. Thorat and Priyanka More	
Ranking Based Software Quality Assessment Using Experts Opinion	1436
A Role-Based Model of Linux Privilege Management and its Implementation	1442
Yanzhao Li, Bibo Tu, Min Zhu, and Dan Meng	
Track-L: Power Systems, Control Systems, Smart and Intelligent Systems	Homes
A Design of Flight Control System for Four-Rotor Micro Aerial Vehicle	1447
Wang Hong-Qi, Jiang Hua-Long, and Cheng Xin-Wen	
A Comparative Study of S-shape and Concave Software Reliability Growth  Models	1452
Ela Kashyap and Ajay Rana	
A Review of Solid Waste Management Techniques Using GIS and Other Technologies	1456
Priyanka Shrivastava, Shivangi Mishra, and S.K. Katiyar	
Ambidexterity in Entrepreneurship: A Perspective of Dynamic Capability	1460
Analysis of Turning Radius for an Electromagnetic-Driven Spherical Robot	1464
Collaboration Strategy of Multiple Robotic Fish Based on the Mission Planning and Effective Area	1468
Siye Kong, Liang Hu, and Yulian Jiang	
Communication Assisted Overcurrent Protection of Microgrid	1472
Coordinated Design of SSSC Based Power System Stabilizer Using  Differential Evolution Algorithm	1476
Sangram Keshori Mohapatra and Bhabani Sankar Dash	

Design and Implementation of Automatic Operation Terminal System  Liu Fazhan, Li Deshuan, Zhang Hongyu, Liang Qingyun, and Yuan Jia	1482
Design and Realization of Computer Remote Control Software	1486
Design of Electrical Control System Elevator Based on VVVF	1490
Development of a MATLAB/LabVIEW Model for Optimal Tilt Angle and Maximum Power Generation of a PV Module	1493
DROOP Control Strategies of Conventional Power System Versus Microgrid  Based Power Systems - A Review  Zameer Ahmad and S.N. Singh	1499
Dual Simplex Algorithm Aided Adaptive Protection of Microgrid	1505
Experimental Study on Acoustic Propagation Characteristics in Drill-String	1510
GIS Approach to Distribution Network of Phuentsholing Town	1515
Impact of SSSC Control Parameters on Available Transfer Capability  Enhancement	1520
LBP-Haar Multi-Feature Pedestrian Detection for Auto-Braking and Steering  Control System	1527
Bharadwaj Vishanth Thiyagarajan, Andhare Mayur, Bothara Ravina, and Govindwad Akilesh	1027
Modelling and Planning of Mobile Robot Navigation Control in Unknown  Environment	1532
Modified MRAC for Controlling Water Level of Boiler System	1537
Optimum Coordination of Overcurrent Relays in Distribution Systems Using Big-M and Dual Simplex Methods	1540
Optimum Coordination of Overcurrent Relays Using Dual Simplex and Genetic  Algorithms	1544

Pitching Angle Control Method of Underwater Glider Based on Motion  Compensation	1548
Da-Lei Song, Le-Le Yao, Zhen-Yu Wang, and Lei Han	
Research on Feedback Robust Stabilization Control of Periodic Time-Varying  Singular Systems  Jun Feng, Yang Tian, and Luyuan Niu	1552
Robust H∞ Stabilization Control for Linear Time-Varying Uncertain Singular  System	1556
Zhou Jun, Zhou Hao, Feng Jun, and Wang Gang	
State Feedback H∞ Control for Time-Varying Singular System	1561
Terminal Sliding Mode Control for Space Rendezvous and Docking	1566
The Application of Predictive Model to Describe and Control Technological  Process	1571
Michal Peter, Vagaská Alena, Fechová Erika, Gombár Miroslav, and Kmec Ján	
The Design of Control System of Grating Eccentricity Adjustment Based on Motion Control Card	1575
The Design of New High Efficiency Photovoltaic Grid and Independent Power	
Supply Inverter	1579
Wenjin Wu, Chengjie Zhang, Jianhui Su, and Haining Wang	
Design and Realization of Transformer Fault Diagnostic Expert System Based on Drools	1583
Mu Li, Wenhua Lu, Dongdong Xiang, and Zhengqi Wen	
Towards an Energy Efficient Architecture in Smart Building  Jie Sun and Yongping Zhang	1589
Cooperation Enhanced by Indirect Reciprocity and Spatial Reciprocity in Social P2P Reputation Systems	1593
Nan Si, Linlin Tian, and Wenlin Yao	
Dynamic Characteristics of the Antagonistic Pneumatic Muscle-Based  Actuator for Biomechanical Applications	1598
Intelligent Hospital Management System (IHMS)	1602
Prediction of HPV Risk Types from Protein Secondary Structure	1605

The Effect of Dipping Temperature and Dew Point on Coating Weight	
and Thickness for a Hot Dipping Process Simulator	1610
Zhijian Sun	
Three-Dimensional Road Roughness Measurement System Development	
Based on Laser Rangefinder	1613
Xiaoqing Zhu, Yang Chen, Yinbo Liu, and Dawei Liu	

#### **Author Index**