## **2014 International Conference on Signal Processing and Integrated Networks**

(SPIN 2014)

Noida, Delhi-NCR, India 20-21 February 2014



IEEE Catalog Number: ISBN:

CFP14SPJ-POD 978-1-4799-2867-5

## TABLE OF CONTENTS

	SESSION : SIGNAL PROCESSING	
1	A Fuzzy Mask Based on Wavelet Packet for Improving Speech Quality and Intelligibility Sachin Singh, Manoj Tripath, R. S. Anand	1
2	Fault Classification of Phase to Phase Fault in Six Phase Transmission Line using Haar Wavelet and ANN Ravi Kumar, Ebha Koley, Anamika Yadav, A.S. Thoke	5
3	Analysis and Classification of Hardwood Species based on Coiflet DWT Feature Extraction and WEKA Workbench Arvind R. Yadav, R. S. Anand , M. L. Dewal, Sangeeta Gupta	9
4	A Comparison of Interpolation Algorithms for Gramophone Record Sound Reconstruction Christoph F. Stallmann, Andries P. Engelbrecht	14
5	Improvisation of Particle Swarm Optimization Algorithm Baskaran Anand, Indoria Aakash, Akshay, Varatharajan Varrun, Murali Krishna Reddy, Tejaswi Sathyasai, M.Nirmala Devi	20
6	Robust feedback cancellation in hearing aids in the presence of outliers Vasundhara , Ganapati Panda, N. B. Puhan	25
7	Noise Immunity Analysis of Compressed Sensing Recovery Algorithms Vivekanand V, Vidya L, Shyam Kumar U, Deepak Mishra	30
8	Design of a Systolic Array based Multiplier less Support Vector Machine Classifier Bhaswati Mandal,Manash Pratim Sarma , Kandarpa Kumar Sarma	35
9	Musical Instrument Classification using Higher Order Bhalke D.G., Rama Rao C.B. and Bormane D.S	40
10	A novel technique for PDF Estimation using DSP method Anirudh Kaushik, Harish Parthasarathy and Prateek Singh Sengar	46
11	A Study on Strategies and Mutant Factor in Differential Evolution Algorithm for FIR Filter Design Srinivasa Reddy Kotha, Saumya Vij, Sahoo S K	50
12	Speech Modification for Prosody Conversion in Expressive Marathi Text-to-Speech Synthesis Manjare Chandraprabha Anil, Prof. Dr. S. D. Shirbahadurkar	56
13	Subtractive Clustering: A Tool for Reconstructing Noisy Curves Kavita, Navin Rajpal	59
14	Reduced Reference IQA based on Structural Dissimilarity Vikrant Bhateja, Aseem Kals, Aastha Srivastava	63
15	Intuitive Real-Times Platform for Audio Signal Processing and Musical Instrument Response Emulation Patrick Gaydecki and Sheheera Ismail	70
16	Directional Order Statistics Filtering for Suppression of Salt and Pepper Noise Awanish Kumar Shukla, R.L Verma, Mohd. Sanawer Alam, Vikrant Bhateja	76

	SESSION : IMAGE PROCESSING	
17	An Improved Face Recognition Scheme using Transform Domain Features Praful Gupta, Nithin V George	82
18	Moving Object Tracking from Moving Platform Shibarchi Majumder, Rahul Shankar	85
19	Improved Classification of Motor Imagery Datasets for BCI by using Approximate Entropy and WOSF Features Soumya Sen Gupta, Sumit Soman, P Govind Raj, Rishi Prakash	90
20	Gray-level Image Enhancement Using Differential Evolution Optimization Algorithm P. P. Sarangi, B. S. P. Mishra, B. Majhi, S. Dehuri	95
21	Gait Recognition using Partial Silhouette-based Approach Soharab Hossain Shaikh, Khalid Saeed, Nabendu Chaki	101
22	Chaos Based Image Encryption with Orthogonal Polynomials Model and Bit Shuffling R. Krishnamoorthi , Murali	107
23	A Non-Iterative Adaptive Median Filter for Image Denoising Vikrant Bhateja, Kartikeya Rastogi, Aviral Verma , Chirag Malhotra	113
24	Structural Feature Based Approach for Script Identification from Printed Indian Document Sk Md Obaidullah, Anamika Mondal ,Kaushik Roy	120
25	Leaf Identification using Morphology and Structural Decomposition l Parag Bhandarkar, Harshal Doshi, Mamata Kadakia, Rizwan Ahmed	125
26	Edge based directional features for English-Bengali Script Recognition Anurima Tikader, N. B. Puhan	130
27	A Novel Hand Segmentation Method for Multiple-Hand Gesture Recognition System under Complex Background Ananya Choudhury, Anjan Kumar Talukdar, Kandarpa Kumar Sarma	136
28	A New Dynamic Thresholding Based Technique for Detection of Hard Exudates in Digital Retinal Fundus Image <b>Diptoneel Kayal, Sreeparna Banerjee</b>	141
29	Flaws Classification using ANN for RadiographicWeld Images Jayendra Kumar, R.S. Anand, S.P. Srivastava	145
30	Visually Significant Feature Point Maps for Image Retrieval Applications M Partha Sarthi ,M. A. Ansari	151
31	Design and Implementation of an MSI number based Image Watermarking Architecture in Transform Domain. Koushik Mahanta, Dibya Jyoti Das, H.M.Khalid Raihan Bhuya, Ankita Dutta.	157
32	Digital Right Management Control for Joint Ownership of Digital Images using Biometric Features. Anushikha Singh, Malay Kishore Dutta, Carlos M. Travieso, K.M.Soni	164
33	Segmentation based Extended Piecewise Maximum Entropy Histogram for image enhancement Naman Garg, Gaurava Srivastava, Prateek Sengar	168
34	Head Pose Classification by Multi-Class AdaBoost with Fusion of RGB and Depth Images Yixiao Yun, Mohamed H. Changrampadi, Irene Y.H. Gu	174

35	Intensity Difference Based Neuro-Fuzzy System for Impulse Noisy Image Restoration: ID-NFS Rashmi Kumari, Deepak Gambhir, Vikas Kumar	178
36	Uniform repeated insertion of watermark in 3D object Hitendra Garg, Prof. Suneeta Agrawal	184
	SESSION : VIDEO PROCESSING	
37	Video-Based Detection and Analysis of Driver Distraction and Inattention. Yixiao Yun, Irene Y.H. Gu, Mikhail Bolbat, Zulfiqar Hasan Khan.	190
38	Performance Evaluation of Various Moving Object Segmentation Techniques for Intelligent Video Surveillance System. Alok Kumar Singh Kushwaha, Rajeev Srivastava.	196
39	Vision Based Data Extraction of Vehicles in Traffic. Dipankar Mudoi , Parismita A. Kashyap.	202
40	Domain-Shift Tracking: Online Learning and Visual Object Tracking on Smooth Manifolds Irene Y. H. Gu, Zulfiqar H. Khan	209
41	Detection of Human Presence in a surveillance video using Fuzzy Approach Arnav Chowdhury , Sanjaya Shankar Tripathy	216
	SESSION : NETWORK & SECURITY	
42	Modeling and Simulation of DDoS Attack using Omnet++. Ramanpreet Kaur, Amrit Lal Sangal, Krishan Kumar.	220
43	Simulation of Wide Area Measurement System with Optimal Phasor Measurement Unit Location. Soumik Das, Debomita Ghosh, T. Ghose, D.K. Mohanta.	226
44	A Novel Partial Image Encryption using Chaotic Logistic Map. Nitumoni Hazarika, Monjul Saikia.	231
45	Comparative analysis of Random Early Detection (RED) and Virtual Output Queue (VOQ) algorithms in Differentiated Services Network. Shyam Singh Rajput, Vinod Kumar, Santosh Kumar Paul.	237
46	Asynchronous Reservation MAC Protocol for Underwater Acoustic Sensor Network Weihong Zhai, Jun Zhang, Sindhu Hak Gupta.	241
47	An AWG based Optical Router Pallavi S. and M. Lakshmi	245
48	An MEBN Framework as a dynamic firewall's knowledge flow architecture. Abhijit Boruah, Shyamanta M. Hazarika	249
49	A New Chaotic Substitution Box Design for Block Ciphers. Musheer Ahmad, Hammad Haleem, Parvez Mahmood Khan.	255
50	CCI Mitigation in UWB Framework using DFE-RNN Hybrid Approach. Debangi Goswam, Kandarpa Kumar Sarma.	259

51	Gene Expression Profiling by Estimating Parameters of Gene Regulatory Network Using Meta-heuristics: A Comparative Study.	
	Surama Biswas, Sriyankar Acharyya	264
52	Performance Evaluation of Routing Protocols for sending Healthcare data over WiMAX network Shashwat Pathak and Basant Kumar	269
53	Security Enhancement by Detection and Penalization of Malicious Nodes in Wireless Networks Deepika Kukreja, Mohit Miglani, S. K. Dhurandher and B. V. R. Reddy	275
54	Securing AODV Routing Protocol in MANET using NMAC with HBKS Technique K.V. Arya and Shyam Singh Rajput	281
55	A Novel Interleaver Design for Multimode Communication in WLAN Sagarika Mohanty and Noor Mahammad Sk	286
56	Geocast Routing: Recent Advances and Future Challenges in Vehicular Adhoc Networks Omprakash Kaiwartya and Sushil Kumar.	291
	SESSION : COMMUNICATION	
57	MIMO Receiver System Using Single RF Front-End	
	Changyoung An, Heung-Gyoon Ryu	297
58	Performance Analysis of Atmospheric Radar Echoes using Matched Filter.	
	N Padmaja, S Varadarajan, Ch D V Subba Rao.	301
59	Smoothing of GPS-based Timing Data by Moving Average Technique Utilizing Fuzzy Logic.	
	Shruti Bansal, P Banerjee.	306
60	Low Frequency Digitally Programmable Universal Filter for Communication System.	
	Devesh Singh, Neelofer Afzal, Divya Asija, Sachin Kumar Yadav.	311
61	Performance Comparison of Supervised and Unsupervised / Blind Equalization Algorithms for QAM Transmitted Constellations	
	Ram Nishanth Vanka, S Balarama Murty, B Chandra Mouli.	316
62	Low SNR Radiometric Detection in Cognitive Radio.	
	Deep Raman, N. P. Singh, Manish Kumar Dhaka	322
63	Existing Scenario of Near Field Communication in Transport Sector.	
	Jimmy Gautam, Yogesh Kumar, Ashutosh Gupta	327
64	Performance Analysis of Optical Wireless Communication System with a Decode and Forward Rela. Mona Aggarwal, Parul Gar, Parul Puri,,Prabhat Kumar Sharma	333
65	Acute direction Route Node Selection Multipath Routing for VANET: Design Approach.	
	Harish Laxmichand Sharma, Pankaj Agrawal, R V Kshirsagar	338
66	Performance Survey of IDMA with different Interleavers.	244
	Sonam Sharma, Paresh Chandra Sau, Aasheesh Shukla.	344

67	Realization of 2:4 reversible decoder and its applications Neeta Pandey, Nalin Dadhich, Mohd. Zubair Talha	349
68	Design and Analysis of RF Signal Distribution over Optical Fiber for Active Aperture Radar Manisha Mathur, N. Sridharb, J. K. Rai	354
69	Preamble aided Energy Detection based Synchronization in Non-Coherent UWB Receiver. Farhana Begum, Manash Pratim Sarma, Manash Pratim Sarma	358
70	Design and Implementation of a Novel Digital Interplex Modulator for Future Navigation Satellite System. Deepak Mishra, Mahesh Kumar	364
71	A Study of Four Wave Mixing Effects in RF-Over-Fiber System. Sunish Kumar O S, Jaison C S, Syari Raju, Rinku Sebastian, Ann Maria Mathew, Anu Reeby John, Senthil Kumar G	368
72	SDR – Implementation of Low Frequency Trans-Receiver on FPGA Shahana K, Ravi Kumar Gupta, K S Parikh	371
73	Effect of Dynamic Threshold & Noise Uncertainty in Energy Detection Spectrum Sensing Technique for Cognitive Radio Systems Kriti Chhabra, Garima Mahendru, P Banerjee.	377
74	Optimal resource allocation techniques for Cooperative AF and DF wireless networks Manisha A. Upadhyay, D.K. Kothari.	382
75	Design And Analysis Of Low Pass Microwave Filter Using Metamaterial Ground Structure. Deepti Gupta, Prasoon Gupta, Pranjal Chitransh, Dr. P.K. Singhal	388
76	Utilizing Mobile Station Capacity and Reduction in Code Blocking. Vipin Balyan, Davinder S Saini, Pranjal Aggarwal, Gunjan Gupta, Inderjeet Sharma	393
77	Conversion Gain and Linearity Enhancement of Active CMOS Mixer for Wireless Applications Vikram Singh Yadav Abhay Chaturvedi	397
78	Fair Adaptive Resource Allocation Algorithm for Heterogeneous Users in OFDMA System. R. L. Ujjwal, C. S. Rai and Nupur Prakash.	402
79	Solving 55-Cell Benchmark Frequency Assignment Problem by Novel Nature Inspired Algorithm. Avtar Singh Buttar, Ashok Kumar Goel, Shakti Kumar	407
	SESSION : WIRELESS SENSOR NETWORK	
80	A Wireless Sensor Network based Pipeline Monitoring System. Anupama K R, Nishad Kamdar, Santosh Kumar Kamalampet, Dhruv Vyas, Siddharth Sahu, Supan Shah	412
81	Prolonging the Lifetime of Wireless Sensor Networks using Prediction based Data Reduction Scheme Dhirendra Pratap Singh, Vikrant Bhateja, Surender Kumar Soni	420
82	Comparative analysis of Wireless Sensor Network Motes Sachin Gajjar, Nilav Choksi, Mohanchur Sarkar, Kankar Dasgupta	426
83	An improved leach protocol for indoor wireless sensor networks Abdullah Erdal TÜMER, Mesut GÜNDÜZ	432

84	A Framework for Energy Efficient Routing Protocol for Homogeneous Wireless Sensor Networks Using Sensing Range. Apeksha Chauhan, Raghove Bhargove, Tanvi Sharma, Tapan Kumar Jain.	438
85	Analytical Energy Consumption Model for MAC Protocols in Wireless Sensor Networks. Mahendra Ram, Sushil Kumar.	444
	SESSION : VLSI IN SIGNAL PROCESSING	
86	A New Design of Low Power High Speed Hybrid CMOS Full Adder. Mayur Agarwal, Neha Agrawal, Md. Anis Alam	448
87	A Hybrid-Radix Approach for Efficient Implementation of Unfolded CORDIC Architectures for FPGA Platform.s Burhan Khurshid, Roohie Naz Mir, Animesh Kumar, Shatish Kumar.	453
88	A 4 GS/s,1.8 V Multiplexer encoder based Flash ADC using TIQ Technique. Liyaqat Nazir, Roohie Naaz Mir , Najeeb-ud-din Hakim.	458
89	FPGA Implementation of Automatic Modulation Recognition System for Advanced SATCOM System. Durga Digdarsini, Mahesh Kumar, Gopichand Khot , T.V.S. Ram, V.K.Tank.	464
90	HDL Based Implementation of NxN Bit-Serial Multiplier. Shamim Akhter, and Saurabh Chaturvedi	470
91	An Efficient Hardware Based MAC Design in Digital Filters with Complex Numbers. Mohamed Asan Basiri M, Noor Mahammad Sk	475
92	A Novel Method for Dual Output Dynamic Logic Using SCL Topology. Shamim Akhter, and Saurabh Chaturvedi.	481
93	High Speed Multiplier for FIR Filter Design using Window. Tushar Shukla,Prabhat Kumar Shukla, Harish Prabhakar.	486
94	CMOS Digitally Programmable Grounded Inductor. Devesh Singh, Neelofer Afzal, Pallavi Choudekar, Sachin Kumar Yadav.	492
95	Novel DVCCs Based Voltage-Mode First-Order All-Pass Sections Vijay Kumar Dixit, Rajeev Gupta and Kirat Pal	497
96	Multiplication Acceleration Through Quarter Precision Wallace Tree Multiplier. Samaresh Chandra Nayak, Mohamed Asan Basiri M and Noor Mahammad Sk	502
97	Small Signal modelling of GaN HEMT at 70GHz. Mahalakshmi B S , Manikantan S, Bhavana P , Prem Anand M, Sai Eknaath RSS, Nirmala Devi M	506
98	A Novel Flexible Baseband Processor Architecture Framework. Harshit Srivastava and Noor Mahammad Sk	511
99	An Efficient Implementation of Synthesis Filter Bank and Digital Spectrum Processing on Xilinx Virtex-5 FPGA for Onboard Transparent Processor Pramod Mishra, Neeraj Mishra, Himanshu Shah, Alak Banik	517
100	OFCC based Logarithmic Amplifier Neeta Pandey, Pragya Tripathi, Rajeshwari Pandey, Ravi Batra	522

101	A Novel DFAL based Frequency Divider Himanshu Puri, Kshitij Ghai, Kirti Gupta, Neeta Pandey	526
102	Low Power D-latch design using MCML Tri-state Buffers Radhika, Neeta Pandey, Kirti Gupta, Maneesha Gupta.	531
103	New Parallel R-L impedance using single VDTA & its High Pass Filter Application. Mayank Srivastava, Dinesh Prasad, D. R. Bhaskar	535
104	Characterization & Improvement of SNM in Deep Submicron SRAM Design S.K. Singh, B.K. Kausik, S.V.Singh, C. Chauhan	538
105	ZC-CFTA-Based Trans-impedance-mode Universal Biquad Filter with Electronic Tuning S.V. Singh, R.S. Tomar, D.S.Chauhan	543
106	Fully Integrated Electronically Tunable Universal Biquad Filter operating in Current-Mode <b>R.S. Tomar, S.V. Singh, C. Chauhan</b>	549
107	Current Tunable Current-Mode TISO Biquad Filter Consisting of Two MCFTAs and Minimum Number of Grounded Capacitors S.V. Singh, R.S. Tomar, D.S.Chauhan	555
108	A 3.1–10.6 GHz CMOS Down-Conversion Mixer for UWB System Dheeraj Kalra, Abhay Chaturvedi	561
109	Low voltage high performance FGMOS based Wilson current mirror Maneesha Gupta, Richa Srivastava, Urvashi Singh	565
	SESSION : BIOMEDICAL SIGNAL PROCESSING	
110	SESSION : BIOMEDICAL SIGNAL PROCESSING Entropy Based Integrated Diagnosis for Enhanced Accuracy and Removal of Variability in Clinical Inferences. Amit Sehgal, Rajeev Agarwal	571
110	Entropy Based Integrated Diagnosis for Enhanced Accuracy and Removal of Variability in Clinical Inferences.	571 576
	Entropy Based Integrated Diagnosis for Enhanced Accuracy and Removal of Variability in Clinical Inferences. Amit Sehgal, Rajeev Agarwal Removing "Cleaned" Eye-blinking Artifacts from EEG Measurements.	
111	Entropy Based Integrated Diagnosis for Enhanced Accuracy and Removal of Variability in Clinical Inferences. <b>Amit Sehgal, Rajeev Agarwal</b> Removing "Cleaned" Eye-blinking Artifacts from EEG Measurements. <b>Ulrich Heute, Alina Santillán Guzmán</b> Bispectrum Analysis of EEG for Motor Imagery Classification.	576
111 112	Entropy Based Integrated Diagnosis for Enhanced Accuracy and Removal of Variability in Clinical Inferences. Amit Sehgal, Rajeev Agarwal Removing "Cleaned" Eye-blinking Artifacts from EEG Measurements. Ulrich Heute, Alina Santillán Guzmán Bispectrum Analysis of EEG for Motor Imagery Classification. Nayantara Kotoky, Shyamanta M Hazarika OTA Based Howland Model for Bio-Electrical Impedance Spectroscopy.	576 581
111 112 113	Entropy Based Integrated Diagnosis for Enhanced Accuracy and Removal of Variability in Clinical Inferences. Amit Sehgal, Rajeev Agarwal Removing "Cleaned" Eye-blinking Artifacts from EEG Measurements. Ulrich Heute, Alina Santillán Guzmán Bispectrum Analysis of EEG for Motor Imagery Classification. Nayantara Kotoky, Shyamanta M Hazarika OTA Based Howland Model for Bio-Electrical Impedance Spectroscopy. Padma Batra, Priyanka, Rajiv Kapoor. Near-infrared LED based Non-invasive Blood Glucose Sensor.	576 581 587
111 112 113	<ul> <li>Entropy Based Integrated Diagnosis for Enhanced Accuracy and Removal of Variability in Clinical Inferences.</li> <li>Amit Sehgal, Rajeev Agarwal</li> <li>Removing "Cleaned" Eye-blinking Artifacts from EEG Measurements.</li> <li>Ulrich Heute, Alina Santillán Guzmán</li> <li>Bispectrum Analysis of EEG for Motor Imagery Classification.</li> <li>Nayantara Kotoky, Shyamanta M Hazarika</li> <li>OTA Based Howland Model for Bio-Electrical Impedance Spectroscopy.</li> <li>Padma Batra, Priyanka, Rajiv Kapoor.</li> <li>Near-infrared LED based Non-invasive Blood Glucose Sensor.</li> <li>Jyoti Yadav, Asha Rani, Vijander Singh, Bhaskar Mohan Murari</li> </ul>	576 581 587
111 112 113 114	<ul> <li>Entropy Based Integrated Diagnosis for Enhanced Accuracy and Removal of Variability in Clinical Inferences.</li> <li>Amit Sehgal, Rajeev Agarwal</li> <li>Removing "Cleaned" Eye-blinking Artifacts from EEG Measurements.</li> <li>Ulrich Heute, Alina Santillán Guzmán</li> <li>Bispectrum Analysis of EEG for Motor Imagery Classification.</li> <li>Nayantara Kotoky, Shyamanta M Hazarika</li> <li>OTA Based Howland Model for Bio-Electrical Impedance Spectroscopy.</li> <li>Padma Batra, Priyanka, Rajiv Kapoor.</li> <li>Near-infrared LED based Non-invasive Blood Glucose Sensor.</li> <li>Jyoti Yadav, Asha Rani, Vijander Singh, Bhaskar Mohan Murari</li> <li>ESSION : EMBEDDED &amp; SIGNAL PROCESSING</li> <li>Non-Dominated Sorting Environmental Adaptation Method (NS-EAM.)</li> </ul>	576 581 587 591

118	A Low Cost Smart Plug in Fuel Module for Automotive Applications. Gaurav Chitranshi, Sachin Sharma.	613
119	Robustness Study and CNFET Realization of Optimal Logic Circuit for Ultralow Power Applications Prashant Gupta, Aminul Islam	618
120	MRDMS-Mobile Replicated Database Management Synchronization Divyashikha Sethi,Swati Mehta, Anant Chowdhary, Kartikeya Bhatt, Siddharth Bhatnagar	624
	SESSION : ROBOTICS & SIGNAL PROCESSING	
121	Bio Inspired Cuckoo Search Algorithm Based Neural Network and its Application to Noise Cancellation. Kunja Bihari Swain, S.S.Solanki, Asim Kumar Mahakula.	632
122	Extending modules for iCub simulator to emulate human grasp forms. Gitimoni Saikia.	636
123	A New Circuit to Measure Resistance Variation Suitable for Strain gauge. A. Jain, M. A. Maktoom, M. S. Hashmi.	641
124	Quantifying Smartphone Vulnerabilities Ankur Kataria, Tricha Anjali, Raghu Venkat	645
125	Pupillometry in Conjugation with Automatic Parking as a Tool of Automobile Safety. Samerender.N.H, W.M.Lekha, H.Ramyya	650
	SESSION : ANTENNA	
126	Design and Analysis of a Pentagonal Rectenna. Anuroop, Deepak Gangwar, R. L. Yadava.	654
127	Gain Enhancement in A Novel Square Microstrip Patch Antenna Using Hybrid Substrates. Arvind Kumar and Mithilesh Kumar.	659
128	Design of Stacked Miniaturized Slotted Antenna with Enhanced Bandwidth for WiMAX Application. Jimmy Gautam and N. Jayanthi.	663
129	Miniaturized Inverted Multiband Stacked Triangular Fractal Patch Antenna for Wireless Communication. Sumit Kumar, Deepak Gangwar, R. L. Yadava	667
130	Analysis of Dielectric Rod Antenna with an Infinite Ground Plane. Shalini Sah, Ashok Mittal, Malay Ranjan Tripathy, Umesh Kumar.	671
131	Design of Double sided Metamaterial Antenna for Mobile Handset Applications. N. Prasanthi Kumari, Dr. Ravi Gowri, Praful Ranjan, Dr. Piyush Kuchhal	675
	SPECIAL SESSION: ADAPTIVE AND INNOVATIVE SYSTEMS DESIGN AND APPLICATIONS IN SIGNAL, IMAGE AND SPEECH PROCESSING	
132	Performance of Drivable Path Detection System of Autonomous Robots in Rain and/or snow Scenario. Agunbiade O. Yinka, Selemon M. Ngwira, Zuva Tranos, Dehinbo O. Johnson	679
133	Formant Based Linear Prediction Coefficients for Speaker Identification. Sumit Srivastava, Pratibha Nandi, G. Sahoo, Mahesh Chandra	685

134	Chaotic Map Based Steganography of Gray Scale Images in Wavelet Domain. Shalu Garg, Monika Mathur	689
135	SVM Based Adaptive Median Filter Design for Face Detection in Noisy Images Sanjeev Kumar, Asutosh Kar, Mahesh Chandra	695
136	A Reduced Reference Distortion Estimation Measure for Color Images. Vikrant Bhateja, Aastha Srivastava, Aseem Kalsi	699
137	Real Time Human Face Detection and Tracking.	
	Jatin Chatrath, Pankaj Gupta, Puneet Ahuja , Aryan Goel, Shaifali M.Arora	705
138	Parametric Models for Segmentation of Cardiac MRI database with Geometrical Interpretation. Anupama Bhan	711
139	Improved Decision Median Filter for Video Sequences Corrupted by Impulse Noise. Vikrant Bhateja, Chirag Malhotra, Kartikeya Rastogi, Aviral Verma	716
140	Despeckling of Ultrasound Images using Non-Linear Conductance Function Vikrant Bhateja, Gopal Singh, Atul Srivastava, Jay Singh.	722
141	Gender Specific Emotion Recognition Through Speech Signals. Vinay, Shilpi Gupta, Anu Mehra	727
142	Spectral Analysis of Sine and Cosine BOC Modulated Signals. Tushar Saxena, J.S.Jadon.	734
		754
	SPECIAL SESSION: BIOMETRIC BASED SECURITY	734
143		PIC
143 144	SPECIAL SESSION: BIOMETRIC BASED SECURITY Near Real Time Face Recognition Using Generalized Mean Neural Network Based on PCNN Feature.	
	SPECIAL SESSION: BIOMETRIC BASED SECURITY         Near Real Time Face Recognition Using Generalized Mean Neural Network Based on PCNN Feature.         Poonam Sharma, R. N. Yadav, K. V. Arya.         Robust Iris Identification System using Local Descriptors.	PIC
144	SPECIAL SESSION: BIOMETRIC BASED SECURITY         Near Real Time Face Recognition Using Generalized Mean Neural Network Based on PCNN Feature.         Poonam Sharma, R. N. Yadav, K. V. Arya.         Robust Iris Identification System using Local Descriptors.         K. V. Arya, Girish Kumar Gupta.         A Taxonomy of 2D and 3D Face Recognition Methods.	P 1C 744
144 145	SPECIAL SESSION: BIOMETRIC BASED SECURITY         Near Real Time Face Recognition Using Generalized Mean Neural Network Based on PCNN Feature.         Poonam Sharma, R. N. Yadav, K. V. Arya.         Robust Iris Identification System using Local Descriptors.         K. V. Arya, Girish Kumar Gupta.         A Taxonomy of 2D and 3D Face Recognition Methods.         Radhey Shyam, Yogendra Narain Singh.         Image quality assessment based on noise detection.	P 1C 744 749
144 145	SPECIAL SESSION: BIOMETRIC BASED SECURITY         Near Real Time Face Recognition Using Generalized Mean Neural Network Based on PCNN Feature.         Poonam Sharma, R. N. Yadav, K. V. Arya.         Robust Iris Identification System using Local Descriptors.         K. V. Arya, Girish Kumar Gupta.         A Taxonomy of 2D and 3D Face Recognition Methods.         Radhey Shyam, Yogendra Narain Singh.         Image quality assessment based on noise detection.         Piyush Joshi, Surya Prakash	P 1C 744 749
144 145 146	SPECIAL SESSION: BIOMETRIC BASED SECURITY         Near Real Time Face Recognition Using Generalized Mean Neural Network Based on PCNN Feature.         Poonam Sharma, R. N. Yadav, K. V. Arya.         Robust Iris Identification System using Local Descriptors.         K. V. Arya, Girish Kumar Gupta.         A Taxonomy of 2D and 3D Face Recognition Methods.         Radhey Shyam, Yogendra Narain Singh.         Image quality assessment based on noise detection.         Piyush Joshi, Surya Prakash         SPECIAL SESSION: KNOWLEDGE AIDED SYSTEM DESIGN	P 1C 744 749 755

150	GA-Aided MVDR Beamforming in Wide Band MISO Wireless Channel.	
	Madhushree Sharma , Kandarpa Kumar Sarma.	775
171		
151	A Logistic Map Based PN Sequence Generator for Direct-Sequence Spread-Spectrum Modulation System. Deb Sunder Swami, Kandarpa Kumar Sarma.	780
150	ECC Classification using Wayslet Subland Engravy based Eastures	
152	ECG Classification using Wavelet Subband Energy based Features. Pratiksha Sarma, S. R. Nirmala, Kandarpa Kumar Sarma	785
	i rauksna Sarma, S. K. Nirmana, Kanuarpa Kumar Sarma	703
153	Multilevel-DWT based Image De-noising using Feed Forward Artificial Neural Network	
	Torali Saiki, Kandarpa Kumar Sarma	791
	Interference Cancellation in Massive MIMO Base Stations with Certain Precoding Techniques in Faded	
154	Environment	
	Kalyan Jyoti Mohan, Olivia Gogoi , Parismita Gogoi	795
155	Energy Optimization in WSNs employing Rolling Grey Model	
	Dhirendra Pratap Singh, Vikrant Bhateja , Surender Kumar Soni	801