

# Contents

**Performance Analysis of Morphological Operators Based Feature Extraction and SVD, Neural Networks as Post Classifier for the Classification of Epilepsy Risk Levels . . . . .** 1  
R. Harikumar, T. Vijaykumar, C. Ganesh Babu and M. G. Sreejith

**A Novel Approach for Different Morphological Characterization of ECG Signal. . . . .** 13  
R. Harikumar and S. N. Shivappriya

**Performance Analysis of Wavelet Transforms and Principal Components as Post Classifier for the Classification of Epilepsy Risk Levels from EEG Signals . . . . .** 25  
R. Harikumar, T. Vijaykumar, C. Ganesh Babu and M. G. Sreejith

**Edge Based LSBMR Scheme for Hiding Secret Messages with Genetic Algorithms . . . . .** 37  
P. M. Siva Raja and E. Baburaj

**SMS Based HPCCDD Algorithm for the Identification of Leaf Spot Diseases. . . . .** 49  
P. Revathi and M. Hemalatha

**QPAC: A Novel Document Image Compression Technique Based on ANFIS for Calibrated Quality Preservation. . . . .** 59  
Apurba Das and Arathi Issac

**A DCT Based Near Reversible Data Embedding Scheme for MPEG-4 Video . . . . .** 69  
Sagar Gujjunoori and B. B. Amberker

<b>Shot Boundary Detection and Key Frame Extraction for Sports Video Summarization Based on Spectral Entropy and Mutual Information. . . . .</b>	<b>81</b>
Shanmukhappa Angadi and Vilas Naik	
<b>An Efficient Two Dimensional Multiple Real-Valued Sinusoidal Signal Frequency Estimation Algorithm. . . . .</b>	<b>99</b>
Prasad Kar Sambit and P. Palanisamy	
<b>Speech Separation Based on Time Frequency Ratio of Mixtures and Track Identification . . . . .</b>	<b>113</b>
M. K. Prasanna Kumar	
<b>Designing a Perception Based Anti-Aliasing Filter for Enhancement of Down-Sampled Images . . . . .</b>	<b>121</b>
M. Sankaralingam, S. Arya and Apurba Das	
<b>Efficient Video Processing Method for Traffic Monitoring Combining Motion Detection and Background Subtraction. . . . .</b>	<b>131</b>
Roberts Kadiķis and Kārlis Freivalds	
<b>Combination of Features for Crosslingual Speaker Identification with the Constraint of Limited Data . . . . .</b>	<b>143</b>
B. G. Nagaraja and H. S. Jayanna	
<b>A Competitive Performance Analysis of Proactive Routing Protocols of MANET Under Short Time Communication Scenario . . . . .</b>	<b>149</b>
A. P. Janani, M. Sakthivel and K. Baskaran	
<b>Content Based Medical Image Coding with Fuzzy Level Set Segmentation Algorithm . . . . .</b>	<b>161</b>
Paramveer Kaur Sran, Savita Gupta and Sukhwinder Singh	
<b>An Improved IWT Based Algorithm for Transmission and Security of Telemedicine. . . . .</b>	<b>173</b>
Aparna Mohanty and Asutosh Kar	
<b>Optimal Color Palette for Error Diffusion Techniques . . . . .</b>	<b>183</b>
Mohammed Hassan and Chakravarthy Bhagvati	
<b>A New Morphological Filtering Algorithm for Pre-Processing of Electrocardiographic Signals . . . . .</b>	<b>193</b>
Rishendra Verma, Rini Mehrotra and Vikrant Bhateja	

<b>An Adaptive Image Steganography Algorithm Using Successive Pixel Difference Embedding and Integer Wavelet Transform . . . . .</b>	<b>203</b>
Anirudh H. Yajurvedi and Sudarshanpatil Kulkarni	
<b>On Generation of Silhouette of Moving Objects from Video . . . . .</b>	<b>213</b>
Soharab Hossain Shaikh, Sugam Kumar Bhunia and Nabendu Chaki	
<b>Fast Brain Abnormality Detection Method for Magnetic Resonance Images (MRI) of Human Head Scans Using K-Means Clustering Technique . . . . .</b>	<b>225</b>
T. Kalaiselvi, K. Somasundaram and M. Rajeswari	
<b>A New Shape Feature Extraction Method for Leaf Image Retrieval . . . . .</b>	<b>235</b>
B. Vijayalakshmi	
<b>A Review of Defect Detection on Electrical Components Using Image Processing Technology . . . . .</b>	<b>247</b>
Geoffrey O. Asiegbu, Ahmed M. A. Haidar and Kamarul Hawari	
<b>Optical Flow in Onboard Applications: A Study on the Relationship Between Accuracy and Scene Texture . . . . .</b>	<b>257</b>
Naveen Onkarappa, Sujay M. Veerabhadrapa and Angel D. Sappa	
<b>Character Segmentation for Cursive Handwritten Text Using Ligature Classification and Transition Feature . . . . .</b>	<b>269</b>
S. Gomathi Rohini, R. S. Uma Devi and S. Mohanavel	
<b>Detection of Digital Photo Image Forgery Using Copy-Create Techniques . . . . .</b>	<b>281</b>
S. Murali, Govndraj B. Chittapur and H. S. Prabhakara	
<b>An Enhanced Intrinsic Biometric in Identifying People by Photoplethysmography Signal . . . . .</b>	<b>291</b>
N. S. Girish Rao Salanke, N. Maheswari and Andrews Samraj	
<b>Image Denoising Using Multiple Wavelet Decomposition with Bicubic Interpolation . . . . .</b>	<b>301</b>
R. Vijaya Arjunan	
<b>FPGA Synthesis of SIRM Fuzzy System-Classification of Diabetic Epilepsy Risk Levels from EEG Signal Parameters and CBF . . . . .</b>	<b>313</b>
N. B. Balamurugan, M. Jothi and R. Harikumar	

<b>Hierarchical Clustering Algorithm for Intensity Based Cluster Merging and Edge Detection in Medical Images . . . . .</b>	<b>323</b>
R. Harikumar, B. Vinoth Kumar, G. Karthick, L. K. Chand and C. Navin Kumar	
<b>A Comparative Analysis of Image Fusion Methods Using Texture. . . . .</b>	<b>339</b>
Jharna Majumdar and Bhuvaneshwari S. Patil	
<b>Performance Evaluation of Gabor Filter in Removing Rician Noise in MR Images . . . . .</b>	<b>353</b>
J. Papitha and D. Nedumaran	
<b>Multi-Pass Unsymmetric Trimmed Median Filter for Salt-and-Pepper Noise Removal . . . . .</b>	<b>365</b>
Navaneeth K. Ramakrishnan, Pillai Praveen Thulasidharan, Arun D. Panicker and Madhu S. Nair	
<b>Analysis and Evaluation of Keystroke Duration of User's Typing as a Distinctive Measure of Recognition . . . . .</b>	<b>375</b>
Dwijen Rudrapal and Smita Das	
<b>Analysis of Color Moment as a Low Level Feature in Improvement of Content Based Image Retrieval. . . . .</b>	<b>387</b>
Smita Das and Dwijen Rudrapal	
<b>Enhancing Security in Medical Image Communication with JPEG2000 Compression and Lossless Watermarking . . . . .</b>	<b>399</b>
A. Umamageswari and G. R. Suresh	
<b>Proposal of a Search for Rotation Based Independent Component Analysis (SRICA) Algorithm . . . . .</b>	<b>411</b>
Bhaveshkumar C. Dharmani	
<b>Local Fractal Dimension-Based Color Quantization for Error Diffusion Techniques . . . . .</b>	<b>423</b>
Mohammed Hassan and Chakravarthy Bhagvati	
<b>Enhanced Dynamic Error Concealment Algorithm for Multiview Coding Based on Lost MBs Sizes and Adaptively Selected Candidates MBs. . . . .</b>	<b>435</b>
Mohamed Ebian, Mohamed El-Sharkawy and Salwa El-Ramly	

<b>Multi-Resolution 3D Human Brain Visualization Through Streaming . . . . .</b>	445
V. Vani, R. Pradeep Kumar and Mohan S	
<b>Profiling User Interactions of 3D Complex Meshes for Predictive Streaming and Rendering . . . . .</b>	457
V. Vani, R. Pradeep Kumar and Mohan S	
<b>Multi-Table Reinforcement Learning for Visual Object Recognition . . . . .</b>	469
Monica Piñol, Angel D. Sappa and Ricardo Toledo	
<b>DFT-Based Feature Extraction and Intensity Mapped Contrast Enhancement for Enhanced Iris Recognition . . . . .</b>	481
S. M. Rakesh, G. S. P. Sandeep, K. Manikantan and S. Ramachandran	
<b>Programmable Gaussian Noise Generator to Test and Characterize Onboard Subcarrier Systems in Satellite Communication . . . . .</b>	495
K. K. Raghunandana, P. N. Ravichandran, Sunil Kulkarni, H. S. Vasudeva Murthy and M. Vanitha	
<b>A Novel Block De-noising Algorithm for Sounds of Indian Musical Instruments with Modified Threshold in Wavelet Domain. . . . .</b>	505
Raghavendra Sharma and V. Prem Pyara	
<b>Nonlocal Total Variation Based Speckle Denoising Model. . . . .</b>	517
Arundhati Bagchi Misra and Hyeona Lim	
<b>Foot Motion Recognition for Human–Computer Interaction . . . . .</b>	529
Hyun-Min Choi, Yeong-Seob Jeong, Seung-Jun Son and Seung Eun Lee	
<b>Content Based Image Retrieval Using Self Organizing Map . . . . .</b>	535
Purohit Shrinivasacharya and M. V. Sudhamani	
<b>Moving Object Tracking in Occluded and Cluttered Backgrounds Using Adaptive Kalman Filtering . . . . .</b>	547
Mohammed Ahmed, Youngshin Ahn and Jaeho Choi	
<b>Adaptive Enhancement of Underwater Images . . . . .</b>	559
Jharna Majumdar, Aparna Manikonda and G. M. Venkatesh	

<b>Real-Time Automatic Detection and Recognition of Hamming Code Based Fiducial Marker . . . . .</b>	<b>575</b>
Sundar Raj Deepika and N. Avinash	
<b>Automated Video Surveillance for Retail Store Statistics Generation . . . . .</b>	<b>585</b>
N. Avinash, M. S. Shashi Kumar and S. M. Sagar	
<b>Cataloging of Happy Facial Affect Using a Radial Basis Function Neural Network . . . . .</b>	<b>597</b>
M. Nachamai and Pranti Dutta	
<b>Color Invariant Feature Detection and Matching in Underwater Stereo Images. . . . .</b>	<b>609</b>
C. J. Prabhakar and P. U. Praveen Kumar	
<b>Feature Subset Selection Using PSO-ELM-ANP Wrapper Approach for Keystroke Dynamics . . . . .</b>	<b>621</b>
D. Shanmugapriya and G. Padmavathi	
<b>Age Estimation Using Specific Gabor Filter on Upper Facial Area . . .</b>	<b>629</b>
Hadi Affendy Dahlan, Syamsiah Mashohor, Sharifah Mumtazah Syed Ahmad Abdul Rahman and Wan Azizun Wan Adnan	
<b>Author Index . . . . .</b>	<b>639</b>

Proceedings of the Fourth International Conference on  
Signal and Image Processing 2012 (ICSIP 2012)

Volume 1

S, M.; Kumar, S.S. (Eds.)

2013, XVI, 641 p., Hardcover

ISBN: 978-81-322-0996-6