

2011 IEEE International Symposium on Signal Processing and Information Technology

(ISSPIT'4233)

**Bilbao, Spain
14 – 17 December 2011**



**IEEE Catalog Number: CFP11SSP-PRT
ISBN: 978-1-4673-0752-9**

TABLE OF CONTENTS

Mechanical Vibration Signal Compression by LOT-based Subband Coding	1
<i>Marius Oltean, Jose Picheral, Elisabeth Lahalle, Hani Hamdan</i>	
An Interactive City Framework: Mobile Cloud Computing Approach	5
<i>Heba M. Abd El Aty , Hanan A. Hassan , Walaa M. Sheta</i>	
A Bayesian Network-based Tunable Image Segmentation Algorithm For Object Recognition	11
<i>Fahim Irfan Alam, Iker Gondra</i>	
Content-Based Image Copy Detection Using Dual Signatures.....	17
<i>Nadia Baaziz, Maxime Guinin</i>	
Simulation of the Anti-Collision Process of RFID Systems Based on Multiple Access Protocol Modeling.....	23
<i>Hadjer Saadi, Rachida Touhami, Mustapha C. E. Yagoub</i>	
Performance Analysis of Basic Tree Protocols and ALOHA-Based Anti-Collision Algorithms Used in RFID Systems.....	29
<i>Hadjer Saadi, Rachida Touhami, Mustapha C. E. Yagoub</i>	
Mining Rare Cases in Post-Operative Pain by Means of Outlier Detection	35
<i>M. U Ahmed, P. Funk</i>	
Improving N-Finder Technique for Extracting Endmembers	42
<i>Mahmoud Maghrbay, Reda Ammar, Sanguthevar- Rajasekaran</i>	
A Correlation-Based Algorithm for Classifying Technical Articles	50
<i>Rania Kilany, Reda Ammar, Sanguthevar Rajasekaran</i>	
CSA-based Design of Feedforward Scalable Montgomery Modular Multiplier	54
<i>Tao Wu, Shuguo Li, Litian Liu</i>	
Statistical Analysis of Parkinson Disease Gait Classification using Artificial Neural Network.....	60
<i>Hany Hafiza Manap, Nooritawati Tahir, Ahmad Ihsan M Yassin</i>	
A Technique of Time Domain Sequential Data Embedding into Real Object Image Using Spatially Modulated Illumination	66
<i>Yasunori Ishikawa, Kazutake Uehira, Kazuhisa Yanaka</i>	
Dynamic Transmission of 3D mesh in Wireless Walkthrough Applications	71
<i>Ghada M. Fathy, Hanan A. Hassen, Rehab Gamal, Walaa M. Sheta</i>	
Bitwise Hill Crypto System	80
<i>Ahmed Desoky, Anju Panicker Madhusoodhanan</i>	
Achieving the Workload Balance of the Clusters.....	86
<i>Reda A. Ammar, Al Sayed A. H. Sallam, Amany M. Sarhan, Hebat-Allah M. Ragab</i>	
On the Automatic Prediction of PM10 with In-Situ Measurements, Satellite AOT Retrievals and Ancillary Data	93
<i>Piero Campalani, Thi Nhat Thanh Nguyen, Simone Mantovani, Gianluca Mazzini</i>	
EM Algorithm Of Spherical Models For Binned Data	99
<i>Hani Hamdan, Jingwen Wu</i>	
No-Reference Image Semantic Quality Approach Using Neural Network	106
<i>Sonia Ouni, Ezzeddine Zagrouba, Majed Chambah, Michel Herbin</i>	
Criteria for Performance Improvement in Metropolitan Area WDM Ring Networks.....	114
<i>Peristera A. Baziana, Ioannis E. Pountourakis</i>	
Time-Frequency Signal and Image Processing on Non-stationary Signals with Application to the Classification of Newborn EEG Abnormalities.....	120
<i>Boualem Boashash, Larbi Boubehir, Ghasem Azemi</i>	
Analysis For Effective Approaches Towards Generating Of Artificial Neuron Structures	130
<i>Stefan Badura</i>	
On Designing Optimal Control Systems Through Genetic And Neuro-Fuzzy Techniques	134
<i>Daniilo Pelusi</i>	
Wavelet Transform For The Analysis Of EEG Signals In Patients With Oral Communications Problems.....	140
<i>Maria Viqueira, Begona Garcia Zapirain, Amaia Mendez</i>	
Nonlinear Bandwidth Extension of Audio Signals based on Hidden Markov Model	144
<i>Xin Liu, Changchun Bao, Liyan Zhang, Xingtao Zhang, Feng Bao, Bing Bu</i>	
Nonlinear Bandwidth Extension based on Hidden Markov Model	150
<i>Liu Xin</i>	

An Improved β-order WEDM Spectral Amplitude Estimator for Speech Enhancement	155
<i>Na Li, Chang-Chun Bao, Bing-Yin Xia, Feng Deng</i>	
Animated Depth Employing Image Synthesis for 3D Security X-ray Imaging	161
<i>O. Abusaeeda, J. P. O. Evans, D. Downes, J. W. Chan</i>	
A Fixed-Point Iterative Schema for Error Minimization in k-Sparse Decomposition	167
<i>Alessandro Adamo, Giuliano Grossi</i>	
Sparsity Recovery by Iterative Orthogonal Projections of Nonlinear Mappings	173
<i>Alessandro Adamo, Giuliano Grossi</i>	
Improving Performance of Reed-Solomon Decoder by Error/Erasur Correction	179
<i>Kyungsu Ko, Ilhyuk Oh, Dongkuk Ko, Byung Gi Jung</i>	
Fingerprinting Localization based on Neural Networks and Ultra-wideband signals	184
<i>Lei Yu, Mohamed Laaraiedh, Stéphane Avrillon, Bernard Uguen</i>	
Aerial Image Classification Using Structural Texture Similarity	190
<i>Vladimir Risojevic, Zdenka Babic</i>	
Blue-White Veil And Dark-Red Patch Of Pigment Pattern Recognition In Dermoscopic Images Using Machine-Learning Techniques	196
<i>José Luis García Arroyo, Begoña García Zapirain, Amaia Méndez Zorrilla</i>	
The Effect of Timing Errors on Frequency Offset Estimation in OFDM Systems	202
<i>S. Younis, A. Al-Dweik, C. C. Tsimenidis, B. S. Sharif, A. Hazmi</i>	
Compressed Domain Speech Enhancement based on the Joint Modification of Codebook Gains	207
<i>Bing-Yin Xia, Chang-Chun Bao, Yan Liang, Xuan Zhou, Yu-Wen He, Ru-Wei Li</i>	
A Robust Characterization of Audio Signals Using the Level of Information Content per Chroma	212
<i>Alain Manzo-Martínez, Antonio Camarena-Ibarrola</i>	
Digital Watermarking Method based on Fuzzy Image Segmentation Technique	218
<i>Methaq Gaata, William Puech, Sattar Sadkhn</i>	
Fault Detection in Reciprocating Compressor Valves for Steady-State Load Conditions	224
<i>Kurt Pichler, Andrea Schrems, Thomas Buchegger, Matthias Huschenbett, Markus Pichler</i>	
A Time Frequency Approach to CFAR Detection	230
<i>S. Layeghy, M. Odabae, M. S. Khlif, H. R. Amindavar</i>	
An Interactive Super Resolution Coding Approach Of Images And Videos For Enhanced User Visualization	235
<i>Gamal Fahmy</i>	
Greedy Algorithms for Sparse Adaptive Decision Feedback Equalization	240
<i>Aris S. Lalos, Evangelos Vlachos, Kostas Berberidis, Athanasios A. Rontogiannis</i>	
Applying Integrated Nested Laplace Approximation to the Superresolution Problem	246
<i>Marcelo Oliveira Camponez, Evandro O. Teatini Salles, Mario Sarcinelli-Filho</i>	
A Restoration Method of the Clipped Audio Signals based on MDCT	253
<i>Dawei Zhang, Changchun Bao, Feng Deng, Bingyin Xia, Hao Chen</i>	
Implementation Of A Matching Engine For A Practical Query-By-Singing/Humming System	258
<i>Dalwon Jang, Chai-Jong Song, Saim Shin, Sung-Joo Park, Sei-Jin Jang, Seok-Pil Lee</i>	
Semi-Blind Speech Extraction for Robot Using Visual Information and Noise Statistics	264
<i>Hiroshi Saruwatari, Nobuhisa Hirata, Toshiyuki Hatta, Ryo Wakisaka, Kiyohiro Shikano, Tomoya Takatani</i>	
Multifractal Analysis of Blood Oxygen Level Dependent Functional Magnetic Resonance Imaging	270
<i>Catarina Runa Miranda, Filipe Soares, Inês Sousa, Filipe Janela, Mário Forjaz Secca</i>	
Blind Source Separation of Nondisjoint Sources in The Time-Frequency Domain with Model-Based Determination of Source Contribution	276
<i>Jalil Taghia, Timo Gerkmann, Arne Leijon</i>	
Benchmarking the Performance of SVMs and HMMs for Accelerometer-Based Biometric Gait Recognition	281
<i>Claudia Nickel, Holger Brandt, Christoph Busch</i>	
Disparity Energy Model Using a Trained Neuronal Population	287
<i>Jaime A. Martins, J. M. F. Rodrigues, J. M. H. Du Buf</i>	
Acoustic Analysis of Czech Expressive Recordings from a Single Speaker in Terms of Various Communicative Functions	293
<i>Martin Gruber</i>	
Enhanced Fuzzy-based Models for ROI Extraction in Medical Images	299
<i>Yasser El-Sonbaty, Sherin M. Youssef, Karma M. Fathalla</i>	
Iterative Joint Channel and Noise Variance Estimation and Primary User Signal Detection for Cognitive Radios	305
<i>Ayman Assra, Arash Vakili, Benoit Champagne</i>	

A Robust Super-Resolution Approach With Sparsity Constraint For Near-Field Wideband Acoustic Imaging	310
<i>Ning Chu, Jose Picheral, Ali Mohammad-Djafari</i>	
Genetic Algorithm Implementation of Multi-User Detection in SDMA-OFDM Systems	316
<i>Mohammed Alansi, Ibrahim Elshafiey, Abdulhameed Al-Sanie</i>	
An Embedded Stereo Speech and Audio Coding Method Based on Principal Component Analysis	321
<i>Mao-Shen Jia, Chang-Chun Bao, Xin Liu, Xiao-Ming Li, Ru-Wei Li</i>	
Efficient Computation Of Prolate Spheroidal Wave Functions In Radio Astronomical Source Modeling	326
<i>Parisa Noorishad, Sarod Yatawatta</i>	
Multicriteria Design of Digital Filter with Evolutionary Optimization	331
<i>Krzysztof Walczak</i>	
Motion Estimation in Real Deformation Processes Based on Block-Matching Techniques	336
<i>Alvaro Rodriguez, Carlos Fernandez-Lozano, Jose-Antonio Seoane, Juan R. Rabuñal, Julian Dorado</i>	
Exponentiated Enhancement for Fundamental Frequency Extraction of Noisy Speech	342
<i>Masatoshi Narita, Tetsuya Shimamura</i>	
A Tailor-Made Development For Time Domain Data Series Pre-Processing In The Power Industry	347
<i>Juan J. Gude, Luis Vazquez-Seisdedos, David Diaz Martínez</i>	
A Graphical User Interface Watermarking Technique for the Copyright Protection of Colour Images using Colour Watermarks	354
<i>Ahmed Al-Gindy, Hana Younes, Amira Shaheen, Hala Elsadi</i>	
Iterative Blocking Artefact Reduction Based On Local Contrast Information	359
<i>Amina Saleem, Azeddine Beghdadi, Aladine Chetouani</i>	
CORDIC based Architecture for Blind CFO Estimation in OFDM Systems	365
<i>S. Younis, A. Al-Dweik, C. C. Tsimenidis, B. S. Sharif, A. Hazmi</i>	
Measuring Shape Rectangularities	369
<i>Carlos Martinez-Ortiz, Dragisa Zunic, Jovisa Zunic</i>	
Performance of Unknown and Arbitrary Sparse Signal Detection using Convex Programming Method with Compressive Measurements	375
<i>Chuan Lei, Jun Zhang, Qiang Gao</i>	
Mammography Analysis Using A Soft Perceptual Segmentation Approach	381
<i>D. Cherifi, A. Beghdadi, P. Viaris De Lesegno, A. H. Belbachir</i>	
K-NN Based Interpolation to Handle Artifacts for Heart Rate Variability Analysis	387
<i>S. Begum, M. S. Islam, M. U. Ahmed, P. Funk</i>	
Watershed Regions And Watershed Lines Based Cooperation Strategy For Image Segmentation. Application To Roof Detection	393
<i>Y. El-Merabet, C. Meurie, Y. Ruichek, A. Sbihi, R. Touahni</i>	
Closed Form of Performance Analysis of Decode and Forward Relaying over the Generalized-K Channels	399
<i>Ali Dziri, Didier Le Ruyet, Daniel Roviras, Michel Terre</i>	
With Shadow Elimination Towards Effective Foreground Extraction	404
<i>Stefan Badura, Anton Lieskovsky, Michal Mokrys</i>	
Support Vector Machines with the Priorities Method for Speaker Independent Phoneme Recognition	409
<i>M. Cutajar, E. Gatt, I. Grech, O. Casha, J. Micallef</i>	
A Texture Based Image Retrieval Approach Using Self-Organizing Map Pre-Classification	415
<i>Mostafa. Rahimi, Mohsen. Ebrahimi Moghadam</i>	
An Approximate Polynomial Matrix Eigenvalue Decomposition Algorithm For Para-Hermitian Matrices	421
<i>Soydan Redif, Stephan Weiss, John G. McWhirter</i>	
Comparing Different Approaches for Model Parameters Identification in Short Time	426
<i>Linghan Li, Bastian Kanning, Christian Schenck, Bernd Kuhfuss</i>	
A Content-Based Digital Image Watermarking Algorithm Robust Against JPEG Compression	432
<i>Amir Najafi, Ali Stahkoohi, Mohammad B. Shamsollahi</i>	
Target Classification based on Sensor Fusion in Multi-Channel Seismic Network	438
<i>Mussab Zubair, Klaus Hartmann</i>	
Color Image Encryption through a Novel Chess Based Confusion Scheme using Chaotic Map	444
<i>Rohit Joshi, Sumit Joshi</i>	
A New Hypothesis Testing Based Technique for the Simultaneous Detection of Seismic Events	449
<i>Erion-Vasilis M. Pikoulis, Emmanouil Z. Psarakis</i>	
A Robust Shadow and Light Region Detection using Within-Class Variance in Face Images	455
<i>Tran Anh Tuan, Min Gyu Song, Jin Young Kim</i>	

Low-Complexity LSMR Equalisation of FrFT-Based Multicarrier Systems in Doubly Dispersive Channels	461
<i>Ahmed A. A. Solyman, Stephan Weiss, John J. Soraghan</i>	
Time-Frequency Characterization of Tri-Axial Accelerometer Data for Fetal Movement Detection	466
<i>M. S. Khlif, B. Boashash, S. Layeghy, T. Ben-Jabeur, M. Mesbah, C. East, P. Colditz</i>	
Some Results On Low Resolution Airborne Ultrasonic Image Generation And Processing	472
<i>Dorel Aiordachioaie, Laurentiu Frangu</i>	
Channel Estimation and Tracking for Closed Loop EO-STBC with Differentially Encoding Feedback	478
<i>Mohamed Nuri Hussin, Stephan Weiss</i>	
Computed Tomography CAD System For Monitoring And Modeling The Evolution Of Lung Cancer Nodule	484
<i>Iván Ornes Uriondo, José Luis García Arroyo, Begoña García Zapirain, Amaia Méndez Zorrilla</i>	
R0-Signature: A New Signature Based On Radon Transform And Its Application In Buildings Extraction	490
<i>Hmida Rojbani, Ines Elouedi, Atef Hamouda</i>	
Peniel Method for the Ultrasonic Material Identification in Robots	496
<i>Juan J. Gonzalez, Jovani A. Jimenez, Jaime A. Guzman</i>	
Dual-Lattice-Aided MIMO Detection for Slow Fading Channels	502
<i>Francisco A. Monteiro, Ian J. Wassell</i>	
An Expectation-Maximization-based Approach to the Relative Grid-Locking Problem	508
<i>Stefano Fortunati, Fulvio Gini, Maria S. Greco, Alfonso Farina, Antonio Graziano, Sofia Giompapa</i>	
Multisuser MIMO Amplify-and-Forward Relaying Schemes with Vector Precoding	514
<i>Idoia Jimenez, Stephan Weiss, Mikel Mendicute, Egoitz Arruti</i>	
Hierarchical Underwater Acoustic Sensor Networks with (Virtual) Transmit/Receive Arrays	520
<i>Andrej Stefanov, Milica Stojanovic</i>	
Cooperative Regions for Cooperative MTCM Systems	526
<i>Priyanki Thakore, Andrej Stefanov</i>	
Quantifying Parameters of a Source-Filter Model for Oesophageal Speech	532
<i>John M. O' Toole, Begona Garcia Zapirain</i>	
Vocal Folds Paralysis Detection Using An Adapted Block Matching Algorithm	538
<i>Amaia Méndez Zorrilla, Eneko Lopetegui Alba, Begoña García Zapirain</i>	
A Brief Survey on Multispectral Face Recognition and Multimodal Score Fusion	543
<i>Yufeng Zheng, Adel Elmaghraby</i>	
Validation of Support Vector Regression in Deriving Aerosol Optical Thickness Maps at 1 km²	
Spatial Resolution from Satellite Observations	551
<i>Thi Nhat Thanh Nguyen, Simone Mantovani, Piero Campalani</i>	
High-Resolution and Jamming-Resistant UWB-OFDM SAR Imaging	557
<i>Anowar Hossain, Ibrahim Elshafiey, Majeed A. Alkanhal</i>	
EWMA Based Approaches For Automated Building Energy Analysis	562
<i>Carlos Martinez-Ortiz, Martin Beck, Pieter De Wilde</i>	
Single Channel Speech/Music Segregation Based on a Novel K-means Clustering Schema	567
<i>Seyed-Hossein Alavintia, Farbod Razzazi, Hamed Sadjedi</i>	
Parallel Processing Techniques for the Processing of Synthetic Aperture Radar Data on GPUs	573
<i>William Chapman, Sanjay Ranka, Sartaj Sahni, Mark Schmalz, Uttam Majumder, Linda Moore</i>	
A New Image Quality Estimation Approach For Jpeg2000 Compressed Images	581
<i>Aladine Chetouani, Azeddine Beghdadi</i>	
Author Index	