

Table of Contents

Intelligent Computing in Signal Processing and Pattern Recognition

An 802.11-Based Location Determination Approach for Context-Aware System <i>Chun-Dong Wang, Ming Gao, Xiu-Feng Wang</i>	1
A Face Recognition System on Distributed Evolutionary Computing Using On-Line GA <i>Nam Mi Young, Md. Rezaul Bashar, Phill Kyu Rhee</i>	9
A Fuzzy Kohonen's Competitive Learning Algorithm for 3D MRI Image Segmentation <i>Jun Kong, Jianzhong Wang, Yinghua Lu, Jingdan Zhang, Jingbo Zhang</i>	19
A Hybrid Genetic Algorithm for Two Types of Polygonal Approximation Problems <i>Bin Wang, Chaojian Shi</i>	30
A Hybrid Model for Nondestructive Measurement of Internal Quality of Peach <i>Yongni Shao, Yong He</i>	42
A Novel Approach in Sports Image Classification <i>Wonil Kim, Sangyoon Oh, Sanggil Kang, Kyungro Yoon</i>	54
A Novel Biometric Identification Approach Based on Human Hand <i>Jun Kong, Miao Qi, Yinghua Lu, Shuhua Wang, Yuru Wang</i>	62
A Novel Color Image Watermarking Method Based on Genetic Algorithm <i>Yinghua Lu, Jialing Han, Jun Kong, Gang Hou, Wei Wang</i>	72
A Novel Emitter Signal Recognition Model Based on Rough Set <i>Guan Xin, Yi Xiao, He You</i>	81
A Novel Model for Independent Radial Basis Function Neural Networks with Multiresolution Analysis <i>Gao Yun An, QiuQi Ruan</i>	90

A Novelty Automatic Fingerprint Matching System <i>Tianding Chen</i>	100
Abnormal Pattern Parameters Estimation of Control Chart Based on Wavelet Transform and Probabilistic Neural Network <i>Shaoxiong Wu</i>	112
An Error Concealment Technique Based on JPEG-2000 and Projections onto Convex Sets <i>Tianding Chen</i>	120
An Extended Learning Vector Quantization Algorithm Aiming at Recognition-Based Character Segmentation <i>Lei Xu, Bai-Hua Xiao, Chun-Heng Wang, Ru-Wei Dai</i>	131
Improved Decision Tree Algorithm: ID3 ⁺ <i>Min Xu, Jian-Li Wang, Tao Chen</i>	141
Application of Support Vector Machines with Binary Tree Architecture to Advanced Radar Emitter Signal Recognition <i>Gezhang Zhang, Haina Rong, Weidong Jin</i>	150
Automatic Target Recognition in High Resolution SAR Image Based on Electromagnetic Characteristics <i>Wen-Ming Zhou, Jian-She Song, Jun Xu, Yong-An Zheng</i>	162
Boosting in Random Subspace for Face Recognition <i>Yong Gao, Yangsheng Wang</i>	172
Component-Based Human Body Tracking for Posture Estimation <i>Kyoyoung-Mi Lee</i>	182
Computation of the Probability on the Number of Solution for the P3P Problem <i>Jianliang Tang, Xiao-Shan Gao, Wensheng Chen</i>	191
Context-Awareness Based Adaptive Classifier Combination for Object Recognition <i>Mi Young Nam, Battulga Bayarsaikhan, Suman Sedai, Phill Kyu Rhee</i>	201
Detecting All-Zero Coefficient Blocks Before Transformation and Quantization in H.264/AVC <i>Zhengyou Wang, Quan Xue, Jiatao Song, Weiming Zeng, Guobin Chen, Zhijun Fang, Shiqian Wu</i>	211

Efficient KPCA-Based Feature Extraction: A Novel Algorithm and Experiments <i>Yong Xu, David Zhang, Jing-Yu Yang, Zhong Jing, Miao Li</i>	220
Embedded System Implementation for an Object Detection Using Stereo Image <i>Cheol-Hong Moon, Dong-Young Jang</i>	230
Graphic Editing Tools in Bioluminescent Imaging Simulation <i>Hui Li, Jie Tian, Jie Luo, Yujie Lv</i>	241
Harmonics Real Time Identification Based on ANN, GPS and Distributed Ethernet <i>Zhijian Hu, Chengrue Zhang</i>	251
The Synthesis of Chinese Fine-Brushwork Painting for Flower <i>Tianding Chen</i>	263
Hybrid Bayesian Super Resolution Image Reconstruction <i>Tao Wang, Yan Zhang, Yong Sheng Zhang</i>	275
Image Hiding Based Upon Vector Quantization Using AES Cryptosystem <i>Yanquan Chen, Tianding Chen</i>	285
Image Ownership Verification Via Unitary Transform of Conjugate Quadrature Filter <i>Jianwei Yang, Xinxiang Zhang, Wen-Sheng Chen, Bin Fang</i>	294
Inter Layer Intra Prediction Using Lower Layer Information for Spatial Scalability <i>Zhang Wang, Jian Liu, Yihua Tan, Jinwen Tian</i>	303
Matching Case History Patterns in Case-Based Reasoning <i>Guoxing Zhao, Bin Luo, Jixin Ma</i>	312
Moment Invariant Based Control System Using Hand Gestures <i>P. Premaratne, F. Safaei, Q. Nguyen</i>	322
Multiple-ROI Image Coding Method Using Maxshift over Low-Bandwidth <i>Kang Soo You, Han Jeong Lee, Hoon Sung Kwak</i>	334
Multi-resolution Image Fusion Using AMOPSO-II <i>Yifeng Niu, Lincheng Shen</i>	343

Multiscale Linear Feature Extraction Based on Beamlet Transform <i>Ming Yang, Yuhua Peng, Xinhong Zhou</i>	353
Multisensor Information Fusion Application to SAR Data Classification <i>Hai-Hui Wang, Yan-Sheng Lu, Min-Jiang Chen</i>	364
NDFT-Based Audio Watermarking Scheme with High Robustness Against Malicious Attack <i>Ling Xie, Jiashu Zhang, Hongjie He</i>	374
New Multiple Regions of Interest Coding Using Partial Bitplanes Scaling for Medical Image Compression <i>Li-bao Zhang, Ming-quan Zhou</i>	382
Particle Swarm Optimization for Road Extraction in SAR Images <i>Ge Xu, Hong Sun, Wen Yang</i>	392
Pattern Recognition Without Feature Extraction Using Probabilistic Neural Network <i>Övünç Polat, Tülay Yıldıırım</i>	402
Power Transmission Towers Extraction in Polarimetric SAR Imagery Based on Genetic Algorithm <i>Wen Yang, Ge Xu, Jiayu Chen, Hong Sun</i>	410
Synthesis Texture by Tiling s-Tiles <i>Feng Xue, Yousheng Zhang, Julang Jiang, Min Hu, Tao Jiang</i>	421
Relaxation Labeling Using an Improved Hopfield Neural Network <i>Long Cheng, Zeng-Guang Hou, Min Tan</i>	430
Adaptive Rank Indexing Scheme with Arithmetic Coding in Color-Indexed Images <i>Kang Soo You, Hyung Moo Kim, Duck Won Seo, Hoon Sung Kwak</i>	440
Revisit to the Problem of Generalized Low Rank Approximation of Matrices <i>Chong Lu, Wanquan Liu, Senjian An</i>	450
Robust Face Recognition of Images Captured by Different Devices <i>Guangda Su, Yan Shang, Baixing Zhang</i>	461
Robust Feature Extraction for Mobile-Based Speech Emotion Recognition System <i>Kang-Kue Lee, Youn-Ho Cho, Kyu-Sik Park</i>	470

Robust Segmentation of Characters Marked on Surface <i>Jong-Eun Ha, Dong-Joong Kang, Mun-Ho Jeong, Wang-Heon Lee</i> ...	478
Screening of Basal Cell Carcinoma by Automatic Classifiers with an Ambiguous Category <i>Seong-Joon Baek, Aaron Park, Daejin Kim, Sung-Hoon Hong, Dong Kook Kim, Bae-Ho Lee</i>	488
Segmentation of Mixed Chinese/English Documents Based on Chinese Radicals Recognition and Complexity Analysis in Local Segment Pattern <i>Yong Xia, Bai-Hua Xiao, Chun-Heng Wang, Yao-Dong Li</i>	497
Sigmoid Function Activated Blocking Artifacts Reduction Algorithm <i>Zhi-Heng Zhou, Sheng-Li Xie</i>	507
Simulation of Aging Effects in Face Images <i>Junyan Wang, Yan Shang, Guangda Su, Xinggang Lin</i>	517
Synthetic Aperture Radar Image Segmentation Using Edge Entropy Constrained Stochastic Relaxation <i>Yongfeng Cao, Hong Sun, Xin Xu</i>	528
The Influence of Channel Coding on Information Hiding Bounds and Detection Error Rate <i>Fan Zhang, Xinhong Zhang</i>	538
Wavelet Thinning Algorithm Based Similarity Evaluation for Offline Signature Verification <i>Bin Fang, Wen-Sheng Chen, Xinge You, Tai-Ping Zhang, Jing Wen, Yuan Yan Tang</i>	547
When Uncorrelated Linear Discriminant Analysis Are Combined with Wavelets <i>Xue Cao, Jing-Yu Yang</i>	556
2D Direct LDA for Efficient Face Recognition <i>Un-Dong Chang, Young-Gil Kim, Dong-Woo Kim, Young-Jun Song, Jae-Hyeong Ahn</i>	566
3-D Curve Moment Invariants for Curve Recognition <i>Dong Xu, Hua Li</i>	572
3D Ear Reconstruction Attempts: Using Multi-view <i>Heng Liu, Jingqi Yan, David Zhang</i>	578

A Class of Multi-scale Models for Image Denoising in Negative Hilbert-Sobolev Spaces <i>Jun Zhang, Zhihui Wei</i>	584
A Detection Algorithm of Singular Points in Fingerprint Images Combining Curvature and Orientation Field <i>Xiaolong Zheng, Yangsheng Wang, Xuying Zhao</i>	593
A Mathematical Framework for Optical Flow Computation <i>Xiaoxin Guo, Zhiwen Xu, Yueping Feng, Yunxiao Wang, Zhengxuan Wang</i>	600
A Method for Camera Pose Estimation from Object of a Known Shape <i>Dong-Joong Kang, Jong-Eun Ha, Mun-Ho Jeong</i>	606
A Method of Radar Target Recognition Basing on Wavelet Packets and Rough Set <i>Hong Wang, Shanwen Zhang</i>	614
A Multi-resolution Image Segmentation Method Based on Evolution of Local Variance <i>Yan Tian, Yubo Xie, Fuyuan Peng, Jian Liu, Guobo Xing</i>	620
A New Denoising Method with Contourlet Transform <i>Gangyi Jiang, Mei Yu, Wenjuan Yi, Fucui Li, Yong-Deak Kim</i>	626
A Novel Authentication System Based on Chaos Modulated Facial Expression Recognition <i>Xiaobin Luo, Jiashu Zhang, Zutao Zhang, Hui Chen</i>	631
A Novel Computer-Aided Diagnosis System of the Mammograms <i>Weidong Xu, Shunren Xia, Huilong Duan</i>	639
A Partial Curve Matching Method for Automatic Reassembly of 2D Fragments <i>Liangjia Zhu, Zongtan Zhou, Jingwei Zhang, Dewen Hu</i>	645
A Split/Merge Method with Ranking Selection for Polygonal Approximation of Digital Curve <i>Chaojian Shi, Bin Wang</i>	651
A Training Strategy of Class-Modular Neural Network Classifier for Handwritten Chinese Character Recognition <i>Xue Gao</i>	657

Active Set Iteration Method for New L2 Soft Margin Support Vector Machine <i>Liang Tao, Juan-juan Gu</i>	663
Adaptive Eigenbackground for Dynamic Background Modeling <i>Lei Wang, Lu Wang, Qing Zhuo, Huan Xiao, Wenyuan Wang</i>	670
Adaptive Content-Based Image Retrieval Using Optimum Fuzzy Weight Value <i>Dong-Woo Kim, Young-Jun Song, Un-Dong Chang, Jae-Hyeong Ahn</i>	676
An Adaptive MRF-MAP Motion Vector Recovery Algorithm for Video Error Concealment <i>Zheng-fang Li, Zhi-liang Xu, De-lu Zeng</i>	683
An Efficient Segmentation Algorithm Based on Mathematical Morphology and Improved Watershed <i>Ge Guo, Xijian Ping, Dongchuan Hu, Juanqi Yang</i>	689
An Error Concealment Based on Inter-frame Information for Video Transmission <i>Youjun Xiang, Zhengfang Li, Zhiliang Xu</i>	696
An Integration of Topographic Scheme and Nonlinear Diffusion Filtering Scheme for Fingerprint Binarization <i>Xuying Zhao, Yangsheng Wang, Zhongchao Shi, Xiaolong Zheng</i>	702
An Intrusion Detection Model Based on the Maximum Likelihood Short System Call Sequence <i>Chunfu Jia, Anming Zhong</i>	709
Analysis of Shell Texture Feature of <i>Coscinodiscus</i> Based on Fractal Feature <i>Guangrong Ji, Chen Feng, Shugang Dong, Lijian Zhou, Rui Nian</i>	715
Associative Classification Approach for Diagnosing Cardiovascular Disease <i>Kiyong Noh, Heon Gyu Lee, Ho-Sun Shon, Bum Ju Lee, Keun Ho Ryu</i>	721
Attentive Person Selection for Human-Robot Interaction <i>Diane Rurangirwa Uwamahoro, Mun-Ho Jeong, Bum-Jae You, Jong-Eun Ha, Dong-Joong Kang</i>	728

Basal Cell Carcinoma Detection by Classification of Confocal Raman Spectra <i>Seong-Joon Baek, Aaron Park</i>	735
Blind Signal-to-Noise Ratio Estimation Algorithm with Small Samples for Wireless Digital Communications <i>Dan Wu, Xuemai Gu, Qing Guo</i>	741
Bootstrapping Stochastic Annealing EM Algorithm for Multiscale Segmentation of SAR Imagery <i>Xian-Bin Wen, Zheng Tian, Hua Zhang</i>	749
BP Neural Network Based SubPixel Mapping Method <i>Liguo Wang, Ye Zhang, Jiao Li</i>	755
Cellular Recognition for Species of Phytoplankton Via Statistical Spatial Analysis <i>Guangrong Ji, Rui Nian, Shiming Yang, Lijian Zhou, Chen Feng</i>	761
Combination of Linear Support Vector Machines and Linear Spectral Mixed Model for Spectral Unmixing <i>Liguo Wang, Ye Zhang, Chunhui Zhao</i>	767
Combining Speech Enhancement with Feature Post-processing for Robust Speech Recognition <i>Jianjun Lei, Jun Guo, Gang Liu, Jian Wang, Xiangfei Nie, Zhen Yang</i>	773
Conic Section Function Neural Networks for Sonar Target Classification and Performance Evaluation Using ROC Analysis <i>Burcu Erkmén, Tulay Yildirim</i>	779
3D Map Building for Mobile Robots Using a 3D Laser Range Finder <i>Zhiyu Xiang, Wenhui Zhou</i>	785
Construction of Fast and Robust N-FINDR Algorithm <i>Liguo Wang, Xiuping Jia, Ye Zhang</i>	791
Dental Plaque Quantification Using Cellular Neural Network-Based Image Segmentation <i>Jiayin Kang, Xiao Li, Qingxian Luan, Jinzhu Liu, Lequan Min</i>	797
Detection of Microcalcifications Using Wavelet-Based Thresholding and Filling Dilation <i>Weidong Xu, Zanchao Zhang, Shunren Xia, Huilong Duan</i>	803

ECG Compression by Optimized Quantization of Wavelet Coefficients <i>Jianhua Chen, Miao Yang, Yufeng Zhang, Xinling Shi</i>	809
Effects on Density Resolution of CT Image Caused by Nonstationary Axis of Rotation <i>Yunxiao Wang, Xin Wang, Xiaoxin Guo, Yunjie Pang</i>	815
Embedded Linux Remote Control System to Achieve the Stereo Image <i>Cheol-Hong Moon, Kap-Sung Kim</i>	821
Estimation of Omnidirectional Camera Model with One Parametric Projection <i>Yongho Hwang, Hyunki Hong</i>	827
Expert Knowledge Guided Genetic Algorithm for Beam Angle Optimization Problem in Intensity-Modulated Radiotherapy Planning <i>Yongjie Li, Dezhong Yao</i>	834
Extracting Structural Damage Features: Comparison Between PCA and ICA <i>Luo Zhong, Huazhu Song, Bo Han</i>	840
Face Alignment Using an Improved Active Shape Model <i>Zhenhai Ji, Wenming Zheng, Ning Sun, Cairong Zou, Li Zhao</i>	846
Face Detection with an Adaptive Skin Color Segmentation and Eye Features <i>Hang-Bong Kang</i>	852
Fall Detection by Wearable Sensor and One-Class SVM Algorithm <i>Tong Zhang, Jue Wang, Liang Xu, Ping Liu</i>	858
Feature Extraction and Pattern Classification on Mining Electroencephalography Data for Brain-Computer Interface <i>Qingbao Liu, Zongtan Zhou, Yang Liu, Dewen Hu</i>	864
Feature Extraction of Hand-Vein Patterns Based on Ridgelet Transform and Local Interconnection Structure Neural Network <i>Yu Zhang, Xiao Han, Si-liang Ma</i>	870
Fuzzy Support Vector Machines for Automatic Infant Cry Recognition <i>Sandra E. Barajas-Montiel, Carlos A. Reyes-García</i>	876
Geodesic Gabriel Graph Based Supervised Nonlinear Manifold Learning <i>Huajie Chen, Wei Wei</i>	882

Grouping Sampling Reduction-Based Linear Discriminant Analysis <i>Yan Wu, Li Dai</i>	888
Hierarchical Adult Image Rating System <i>Wonil Kim, Han-Ku Lee, Kyoungro Yoon</i>	894
Shape Representation Based on Polar-Graph Spectra <i>Haifeng Zhao, Min Kong, Bin Luo</i>	900
Hybrid Model Method for Automatic Segmentation of Mandarin TTS Corpus <i>Xiaoliang Yuan, Yuan Dong, Dezhi Huang, Jun Guo, Haila Wang</i>	906
ICIS: A Novel Coin Identification System <i>Adnan Khashman, Boran Sekeroglu, Kamil Dimililer</i>	913
Image Enhancement Method for Crystal Identification in Crystal Size Distribution Measurement <i>Wei Liu, YuHong Zhao</i>	919
Image Magnification Using Geometric Structure Reconstruction <i>Wenze Shao, Zhihui Wei</i>	925
Image-Based Classification for Automating Protein Crystal Identification <i>Xi Yang, Weidong Chen, Yuan F. Zheng, Tao Jiang</i>	932
Inherit-Based Adaptive Frame Selection for Fast Multi-frame Motion Estimation in H.264 <i>Liangbao Jiao, De Zhang, Houjie Bi</i>	938
Intelligent Analysis of Anatomical Shape Using Multi-sensory Interface <i>Jeong-Sik Kim, Hyun-Joong Kim, Soo-Mi Choi</i>	945
Modeling Expressive Music Performance in Bassoon Audio Recordings <i>Rafael Ramirez, Emilia Gomez, Veronica Vicente, Montserrat Puiggros, Amaury Hazan, Esteban Maestre</i>	951
Modeling MPEG-4 VBR Video Traffic by Using ANFIS <i>Zhijun Fang, Shenghua Xu, Changxuan Wan, Zhengyou Wang, Shiqian Wu, Weiming Zeng</i>	958
Multiple Textural Features Based Palmprint Authentication <i>Xiangqian Wu, Kuanquan Wang, David Zhang</i>	964

Neural Network Deinterlacing Using Multiple Fields <i>Hyunsoo Choi, Eunjae Lee, Chulhee Lee</i>	970
Non-stationary Movement Analysis Using Wavelet Transform <i>Cheol-Ki Kim, Hwa-Sei Lee, DoHoon Lee</i>	976
Novel Fault Class Detection Based on Novelty Detection Methods <i>Jiafan Zhang, Qinghua Yan, Yonglin Zhang, Zhichu Huang</i>	982
Novel Scheme for Automatic Video Object Segmentation and Tracking in MPEG-2 Compressed Domain <i>Zhong-Jie Zhu, Yu-Er Wang, Zeng-Nian Zhang, Gang-Yi Jiang</i>	988
Offline Chinese Signature Verification Based on Segmentation and RBFNN Classifier <i>Zhenhua Wu, Xiaosu Chen, Daoju Xiao</i>	995
On-Line Signature Verification Based on Wavelet Transform to Extract Characteristic Points <i>LiPing Zhang, ZhongCheng Wu</i>	1002
Parameter Estimation of Multicomponent Polynomial Phase Signals <i>Han-ling Zhang, Qing-yun Liu, Zhi-shun Li</i>	1008
Parameters Estimation of Multi-sine Signals Based on Genetic Algorithms <i>Changzhe Song, Guixi Liu, Di Zhao</i>	1013
Fast Vision-Based Camera Tracking for Augmented Environments <i>Bum-Jong Lee, Jong-Seung Park</i>	1018
Recognition of 3D Objects from a Sequence of Images <i>Daesik Jang</i>	1024
Reconstruction of Rectangular Plane in 3D Space Using Determination of Non-vertical Lines from Hyperboloidal Projection <i>Hyun-Deok Kang, Kang-Hyun Jo</i>	1030
Region-Based Fuzzy Shock Filter with Anisotropic Diffusion for Adaptive Image Enhancement <i>Shujun Fu, Qiuqi Ruan, Wenqia Wang, Jingnian Chen</i>	1036
Robust Feature Detection Using 2D Wavelet Transform Under Low Light Environment <i>Jihoon Lee, Youngouk Kim, Changwoo Park, Changhan Park, Joonki Paik</i>	1042

Robust Music Information Retrieval in Mobile Environment <i>Won-Jung Yoon, Kyu-Sik Park</i>	1051
Robust Speech Feature Extraction Based on Dynamic Minimum Subband Spectral Subtraction <i>Xin Ma, Weidong Zhou, Fang Ju</i>	1056
Searching Algorithm for Shadow Areas Using Correlation in Fourier Domain and Its Application <i>Choong Ho Lee</i>	1062
Shadow Detection Based on rgb Color Model <i>Baisheng Chen, Duansheng Chen</i>	1068
Shape Analysis for Planar Barefoot Impression <i>Li Tong, Lei Li, Xijian Ping</i>	1075
Statistical Neural Network Based Classifiers for Letter Recognition <i>Burcu Erkmén, Tulay Yildirim</i>	1081
The Study of Character Recognition Based on Fuzzy Support Vector Machine <i>Yongjun Ma</i>	1087
Tracking, Record, and Analysis System of Animal's Motion for the Clinic Experiment <i>Jae-Hyuk Han, Young-Jun Song, Dong-Jin Kwon, Jae-Hyeong Ahn</i>	1093
VEP Estimation with Feature Enhancement by Whiten Filter for Brain Computer Interface <i>Jin-an Guan</i>	1101
Weight Estimation for Audio-Visual Multi-level Fusion in Bimodal Speaker Identification <i>Zhiyong Wu, Lianhong Cai, Helen M. Meng</i>	1107
Special Session on Computing for Searching Strategies to Control Dynamic Processes	
A Study on Optimal Configuration for the Mobile Manipulator Considering the Minimal Movement <i>Jin-Gu Kang, Kwan-Houng Lee, Jane-Jin Kim</i>	1113

Multi-objective Flow Shop Scheduling Using Differential Evolution <i>Bin Qian, Ling Wang, De-Xian Huang, Xiong Wang</i>	1125
A Genetic Algorithm for the Batch Scheduling with Sequence-Dependent Setup Times <i>TsiuShuang Chen, Lei Long, Richard Y.K. Fung</i>	1137
A Study on the Configuration Control of a Mobile Manipulator Base Upon the Optimal Cost Function <i>Kwan-Houng Lee</i>	1145
An Effective PSO-Based Memetic Algorithm for TSP <i>Bo Liu, Ling Wang, Yi-hui Jin, De-xian Huang</i>	1151
Dual-Mode Control Algorithm for Wiener-Typed Nonlinear Systems <i>Haitao Zhang, Yongji Wang</i>	1157
NDP Methods for Multi-chain MDPs <i>Hao Tang, Lei Zhou, Arai Tamio</i>	1163
Research of an Omniberaing Sun Locating Method with Fisheye Picture Based on Transform Domain Algorithm <i>Xi-hui Wang, Jian-ping Wang, Chong-wei Zhang</i>	1169
Author Index	1175