Table of Contents

2019 IEEE 4th International Conference on Signal and Image Processing-(ICSIP 2019)

Preface..............................................................................................................................................................................xix
Committees.......................................................................................................................................................................xx

Session 1—Pattern Recognition and Classification

A Method for Identifying and Classifying Resistors and Capacitors Based on YOLO Network ......................... 1
   Jiye Huang, Yanyi Lu

Overview of one-Class Classification......................................................................................................................... 6
   Sun Wenzhu, Hu Wenting, Xue Zufeng, Cao Jianping

Activity Recognition with Wristband Based on Histogram and Bayesian Classifiers ................................. 11
   Yi-Cong Huang, Wing-Kuen Ling, Chi-Wa Cheng, Chun-Hung Li, Chong-Yan Chen

A Novel Skeleton Spatial Pyramid Model for Skeleton-based Action Recognition ................................. 16
   Yanshan Li, Tianyu Guo, Rongjie Xia, Xing Liu

A New Radar Signal Modulation Recognition Algorithm Based on Time-frequency Transform .............. 21
   Jinliang Bai, Lu Gao, Jingpeng Gao, Hu Li, Ran Zhang, Yi Lu

Skeleton-based Action Recognition with Lie Group and Deep Neural Networks .................................. 26
   Yanshan Li, Tianyu Guo, Xing Liu, Rongjie Xia

Design of the Codewords for Performing the Pattern Recognitions via a Set of Perceptrons with the Domains
   of These Activation Functions Have More Than Two Pieces ................................................................. 31
   Ziyin Huang, Wing-Kuen Ling

Depression Angle Invariant SAR Target Recognition via Feature Transform ............................................ 36
   Ke Wang, Gong Zhang

A Radar Main Lobe Pulse Correlation Sorting Method ................................................................................. 41
   Lin Cheng, Afeng Yang, Zheng Liu

Research on Chinese Sign Language Recognition Methods Based on Mechanomyogram Signals Analysis
   ..................................................................................................................................................................................... 46
   Wanjun Feng, Chunming Xia, Yue Zhang, Jing Yu, Wendu Jiang
Chronological Classification of Ancient Paintings of Mogao Grottoes Using Convolutional Neural Networks

Xiangyu Li, Yuan Zeng, Yi Gong

Cepstral Derivatives in MFCCs for Emotion Recognition

Thayabaran Kathiresan, Volker Dellwo

DOA and Polarization Estimation with Reduced-Dimensional MUSIC Algorithm for L-shaped Electromagnetic Vector Sensor Array

Zhu Beizuo, Xu Xiong, Zhang Xiaofei

Spotlight SAR Image Recognition Based on Dual-Channel Feature Map Convolutional Neural Network

Junjie Liu, Xiongjun Fu, Kaiqiang Liu, Miao Wang, Chengyan Zhang, Qinning Su

Quadratic Discriminant Analysis Based on Graphical Lasso for Activity Recognition

Wang Jinjia, Ji Shaonan, Zhou Yaqian

Blurring Scene Recognition in Short Video

Li Tan, Yanyan Song, Xu Dong, Lina Zhou

A Radar Sigal Recognition Method Based on Fisher Discrimination Dictionary Learning

Chen J. X., Xiao B., Liu F. Z., Guo P. C.

Emotional State Classification Using Pulse Rate Variability

R. Meziati Sabour, Y. Benezeth, F. Marzani, K. Nakamura, R. Gomez, F. Yang

Transfer Learning in Polytime Codes Signal Recognition

Lu Gao, Peng Qin, Hu Li, Shangyue Wang, Heng Sun, Yi Lu

Research on Vehicle Type Classification Method Based on Fusion Features

Cheng Zhang, Zhijian Mao, Chihang Zhao, Xin Shi, Shengmei Lin, Liru Hua

Robust Dynamic Classifier Selection for Remote Sensing Image Classification

Meizhu Li, Shaoguang Huang, Aleksandra Pizurica

Image Matching Based on Harris-Affine Detectors and Translation Parameter Estimation by Phase Correlation

Yi Zheng, Ping Zheng

Image-enhanced Adaptive Learning Rate Handwritten Vision Processing Algorithm Based on CNN

Keqin Chen, Kun Zhu, Meng Meng

Human Activity Classification with Multi-frequency Spectrogram Fusion and Deep Learning

Yong Jia, Ruiyuan Song, Gang Wang, Chao Yan, Yong Guo, Xiaoling Zhong

Acoustic Scene Recognition Based on Convolutional Neural Networks

Fengjiao Sun, Mingjiang Wang, Qiang Xu, Xiaogung Xuan, Xin Zhang

The Hyperspectral Image Clustering Based on Spatial Information and Spectral Clustering

Yiwei Wei, Chao Niu, Hongxia Wang, Daizhi Liu
CNN-Based Broad Learning System ................................................................. 132
     Ting Li, Bin Fang, Jiye Qian, Xuegang Wu
A Robust Chinese License Plate Detection and Recognition System in Natural Scenes .................... 137
     Yuxin Zhang, Chunlei Huang
Two Schemes for Automated Diagnosis of Lentigo on Confocal Microscopy Images ........................ 143
     R. Cendre, A. Mansouri, Y. Benezeth, F. Marzani, J. L. Perrot, E. Cinotti
Automatic Isolated Arabic Speech Recognition and Its Transformation into Signs ............................ 148
     Saeed Mian Qaisar, Bashayer Alhassani, Ozuf Alharbi
Slab Rotation Angles Intelligent Detection Method Based on Perspective Transformation and Boundary Fixed
     Point Algorithm ............................................................................................. 153
     Xin Yue, Peifeng Hao, Yuxin Mao
Automatic Classification of Spider Images in Natural Background ..................................................... 158
     Yang Jian, Su Peng, Li Zhenpeng, Zhao Yu, Zhang Chenggui, Yang Zizhong
Radar Emitter Sorting and Recognition Based on Time-frequency Image Union Feature ..................... 165
     Wang Gongming, Chen Shiwen, Hu Xueruobai, Yuan Junjian
Deep Representation Learning With Feature Augmentation for Face Recognition ............................ 171
     Jie Sun, Shengli Lu, Wei Pang, Zhilin Sun
Classification of Remote Sensing Scenes Based on Neural Architecture Search Network ................... 176
     Lingling Li, Tian Tian, Hang Li
Segmentation of Dwarf Rocks Based on Bayesian Hierarchical Mixture Model ............................... 181
     Yunxin Liang, Jiyu Wu, Chunxiang Li, Jincun Zhang, Biliang Zhong, Zhenkun Chen, Zhenzhang Li
Off-grid STAP Algorithm Based on Reduced-Dimension Local Search Orthogonal Matching Pursuit .... 187
     Zhihui Li, Yongshun Zhang, Qichao Ge, Chong Yan

Session 2—Computer Vision

Research on Monocular Vision Distance Measurement Algorithm Based on Reference Target .......... 192
     Zhengguang Xu, Zhaohui Zhou, Luyao Wang
A Novel Ionospheric Scintillation Mitigation Method Based on Minimum-Entropy Autofocus in P-band SAR
     Imaging ......................................................................................................... 198
     Lei Yu, Yongsheng Zhang, Qilei Zhang, Zhen Dong, Yifei Ji, Beixin Qin
A Graphical PIN Entry System with Shoulder Surfing Resistance .................................................... 203
     Muhammad Salman, Yang Li, Jian Wang
Preliminary Results of Multipath Ghost Suppression Based on Generative Adversarial Nets in TWRI..... 208
     Yong Jia, Ruiyuan Song, Shengyi Chen, Gang Wang, Chao Yan
An Azimuth Nonlinear Chirp Scaling Algorithm for High Squint FMCW SAR Imaging ............................... 213  
Longchao Li, Jianxiong Zhou

An Improved Correlation Filter-Based Target Tracking Method................................................................. 219  
Jun Liu, Zhongqiang Luo, Xingzhong Xiong

Multi-scale Spatial-Temporal Feature Aggregating for Video Salient Object Segmentation ..................... 224  
Changhong Mu, Zebin Yuan, Xiuqin Ouyang, Bo Wang

Category-Level Multi-Attention Based Boundary Refinement for Action Detection ................................. 230  
Peixiang Dong, Lisong Zhu, Yong Zhang

Wide-Angle ISAR Imaging Based on Joint ICPF and PFA Method ............................................................. 235  
Hongyan Kang, Biao Tian, Yongxiang Liu

A Signal Analysis for Feature Points Tracking of Lip Movements............................................................. 241  
Su-Hyeon Cho, Seon-Jong Kim

Combine Voxel Flow and Adaptive Convolutional Kernel for Video Colorization ..................................... 245  
Yu Chen

Session 3—Computer Science

A Power-aware Scheduling Algorithm in Multi-tenant IaaS Clouds ......................................................... 250  
Bin Liang, Xiaoshe Dong, Xingjun Zhang

A Literature Review of the Adaptive Algorithms Adopted in Adaptive Learning Systems ........................... 254  
Zigang Ge, Miaoyin Xi, Yanfei Li

Joint Empirical Mode Decomposition and Singular Spectrum Analysis Based Pre-processing Method for Wearable Non-invasive Blood Glucose Estimation ............................................................. 259  
Xueling Zhou, Ruisheng Lei, Bingo Wing-Kuen Ling, Caijun Li

An Anti-Jamming Method Against SAR Stationary Deceptive Targets Based on DPCA Processing .......... 264  
Penghui Ji, Shiqi Xing

Defect Analysis of Inner-Wall of Pipes by Differentiated Residual Blocks of Convolutional Neural Network .............................................................................................................................................. 269  
An Nguyen, Atsuo Yoshitaka

Speech Care System for Stroke Based on Asynchronous Brain-Computer Interface (BCI) .......................... 274  
Yang Yuna, Zhang Yanyan, Zhai Wenwen, Gao Nuo

A New Group-to-Group Authentication Scheme Based on PUFs and Blockchain ....................................... 279  
Ben Liu, Ziheng Chen, Yan Zhang, Langyu Xiong, Xia Yang, Shuai Chen, Bing Li

Polynomial Fitting Based Crosstalk Suppression in the Monostatic FMCW Radar ....................................... 284  
Penglei, Qingsheng Yu, Jun Wang
Making Deep Neural Networks Robust to Label Noise: A Reweighting Loss and Data Filtration ..........289
Zhengwen Zhang, Yan Li, Yunjie Li, Ying Qin
A Simulation Method of Target Echo Power .................................................................294 
Chenrui Zuo, Haiqi Jiang
New Electromagnetic Transmitter for EM-MWD System Based on Embedded RTOS: uc-OS III ....299
Keman Liu, Xiaolong Li, Tao Wang, Yinghao Zhang, Lipin Li
A Pen-Based Device for Signature Verification .............................................................304
Huimin Jiao, Lu Jin, Yinfei Wang, Jinyao Li, Mingming Zhang
Prediction of Satellite Time Series Data Based on Long Short Term Memory- Autoregressive Integrated 
Moving Average Model (LSTM-ARIMA) ........................................................................308
Yuwei Chen, Kaizhi Wang
Analog Compensator Design for Half Bridge LLC Resonant Converter .................................313
Syed Sikandar Shah, Weifeng Sun, Irfan Tariq, Shengyou Xu
A New Model for Securing Networks Based on Attack Graph ........................................318
Chengyi Cai, Yiheng Zhang, Zhiping Wang, Chongxiang Xue
Group Pruning with Group Sparse Regularization for Deep Neural Network Compression ..........325
Chenglu Wu, Wei Pang, Hao Liu, Shengli Lu
A Novel Efficient Soft Computing Model for Natural Gas Compressibility Factor Based on GMDH Neural 
Network .........................................................................................................................330
Luan Lin, Shiyang Li, Sihao Sun, Yaqi Yuan, Ming Yang
High-performance Convolutional Neural Network Accelerator Based on Systolic Arrays and Quantization 
........................................................................................................................................335
Yufeng Li, Shengli Lu, Jihe Luo, Wei Pang, Hao Liu
Comparison on Performance of Text-Based and Model-Based Architecture in Open Source Native XML 
Database ........................................................................................................................340
Kien Tsong Chau, QianLing He, XuQing Hu, Rui Wu
A VLSI Implementation of Double Precision Floating-Point Logarithmic Function .............345
Liu Hao, Wang Ming-Jiang, Chen Mo-Ran, Liu Ming
Classification of Chopped Strand Mat Defects Based on CSMNet ....................................350
Dong Zhuo, Jun-Feng Jing, Min Zheng, Jun-Yang Zhang

Session 4—Objective Detection

Multi-information Fusion Algorithm for Human Target Tracking ........................................355
Dengtai Tan, Shichao Li, Guangli Wu, Denglou Li, Liping Liu
Valid Data Augmentation by Patch Alpha Matting ................................................................361
Hongyun Li, Lijun Zhou, Jianghao Rao, Jianlin Zhang
Video Abnormal Event Detection Based on ELM ............................................................... 367

WU Guangli, LIU Liping, Zhang Chen, TAN Dengtai
Vehicle Detection in the Aerial Infrared Images via an Improved Yolov3 Network ...................................... 372

Xunxun Zhang, Xu Zhu
Research on Detection Methods of Driving Postures Based on Deformable Component Model .......... 377

Chihang Zhao, Xin Shi, Yanwei Li, Shanguang Xue, Minhui Zhao, Youfeng Zheng
Face Detection Technology Based on Combining Skin Color Model with Improved Adaboost Algorithm .. 381

Zhi-Zhen Li, Qing-Hua Zeng, Xiang-Dong Li, Yang-Yu
Reflection and Absorption Analysis of Obliquely Incident Wave in Reentry Plasma Sheath .......................... 385

Xu Zhang, Xuyang Chen, Yanming Liu, Xiaoping Li
Matrix Information Geometry for Passive Sonar Signal Detection in a Non-Stationary Environment .. 391

Xiaoqiang Hua, Zemin Zhou, Yang Zeng, Qiang Lan, Yongxian Wang, Lilun Zhang, Wenke Wang
A Novel Approach for Marine Small Target Detection Based on Deep Learning ........................................ 395

Meiyan Pan, Jianjun Chen, Shengli Wang, Ziwei Dong
Low PRF Low Frequency Radar Sensor for Fall Detection by Using Deep Learning ................................................ 400

Sixian Chen, Chongyi Fan, Xiaotao Huang, Chun Cao
An Improved D-CNN Based on YOLOv3 for Pedestrian Detection ............................................................. 405

Faizan Ahmad, Li Ning, Mustafa Tahir
Small Boat Detection via Time-Frequency Analysis and DenseNet ............................................................. 410

Guanqing Li, Zhiyong Song, Qiang Fu
Weak Moving Target Detection Based on Short-Time Fourier Transform in Sea Clutter .......................... 415

Xiao-Wei Zhang, Dong-Dong Yang, Jian-Xin Guo, Lei Zuo
Marine Weak Moving Target Detection Using Sparse Learning Dictionary ....................................................... 420

Ziwei Dong, Jun Sun, Jingming Sun, Meiyan Pan
Anti-Time-Delay Repeater Jamming under Sea Surface Target Spatial Position Constraint ......................... 425

Jingfang Yang, Xiongjun Fu, Chengyan Zhang, Xianhan Yin, Peiyu Cong, Shunqi Su
Detecting Negative Emotional Stress Based on Facial Expression in Real Time ........................................... 430

Jin Zhang, Xue Mei, Huan Liu, Shenqiang Yuan, Tiancheng Qian
An Improvement for Video-based Heart Rate Variability Measurement .......................................................... 435

Peixi Li, Yannick Benezeth, Keisuke Nakamura, Randy Gomez, Chao Li, Fan Yang
CFAR Analysis of Non-Coherent Detectors in Compound-Gaussian Clutter with Inverse Gaussian Texture .............................................................................................................................. 440

Jian Xue, Shuwen Xu, Penglang Shui
A Vehicle Movement Based Self-Organized Solar Powered Street Lighting ................................................... 445
Session 5—Communication System

LOTIC: A General Framework for High-Speed Network Traffic Processing ................................................................. 453
   Guo Haoran, Li Haiyan, Hao Liyun

Spatial Information Theory of Sensor Array and Its Application in Performance Evaluation ........................................ 459
   Dazhuan Xu, Xiao Yan, Shengkai Xu, Hao Luo, Yue Chen, Yuehuai Chen

MIMO Radar Transceiver Joint Optimization Using Pre-information of Forward-Squint-Looking GMTI ............... 464
   Zhoodan Lv, Feng He, Zaoyu Sun

DOA Estimation for Massive MIMO System via Low-Complexity Trilinear Decomposition Method .................... 469
   Wajih Ul Hassan, Zhang Xiao Fei, Tanveer Ahmed

Implementation of Digital Lock-in Amplifier Based on High-level Synthesis ........................................................... 474
   Kan Huang, Xibin Zhang, Dihu Chen, Zhigang Cai, Zixin Wang, Min Wang

Design and Implementation of an Efficient Modified CORDIC Algorithm ............................................................... 480
   Yuan Xue, Zhongsong Ma

The Space-time Adaptive Processing Method in Airborne MIMO Radar with Nested Structure ....................... 485
   Yan Zhou, Yanyan Li, Lin Wang

Dynamic Time-slot Allocation Algorithm Based on Environment Sensing in Wireless Sensor Network ............ 490
   Kang Cao, Chuchu Dong, Fengqi Yu

Velocity Estimation of Moving Targets in Multi-Channel SAR via an Amplitude-Based Weighted Average of
   Multiple Pixels .............................................................................................................................................. 495
   Yahua Ren, Junfeng Wang, Xingzhao Liu

Deviation Analysis for Approximate Maximum Likelihood Localization Algorithms ........................................ 500
   Jiang Ling, Fang Shixiong

Markov Chain Based Performance Analysis of LAA and WiFi Coexistence in Dual Carrier Aggregation ............ 504
   Sudat Tuladhar, Lei Cao, Ramanarayanan Viswanathan

The Frequency-Shifting Modulation of Radar Signal Using Active Van Atta Array .............................................. 509
   Song Kunpeng, Feng Dejun

Complex CNN-Based Equalization for Communication Signal ................................................................. 513
   Zexuan Chang, Yongshi Wang, Hao Li, Zhigang Wang

Adaptive Opposition-Based Particle Swarm Optimization Algorithm and Application Research .................. 518
   Ma Y Y, Jin H B, Li H, Zhang H, Li J
Physical Layer Security and Spectral Efficiency Augmentation of Quadrature Spatial Modulation Using Layered Architecture ................................................................. 524

Saad Amir Chaudhry, Xiaoya Zuo, Rugui Yao, Tamer Mekkawy

Two-Dimension DOA Estimation Based on Mixed Circular and Non-circular Signals .................................. 529

Huijing Dou, Lu Sun, Xiao Liang

Performance Monitoring of PAM4 Optical Communication System Based on Principal Component Analysis and Support Vector Regression .......................................................... 535

Qiang Sun, Xiaodong Chen, Yang Zhou

Intra-pulse Movement Analysis and Correction for FMCW CSAR .......................................................... 540

Jianfeng Zhang, Yaowen Fu, Wenpeng Zhang, Wei Yang, Dan Li, Ting Gong

Identification of Ship and Corner Reflector Based on Invariant Features of the Polarization ...................... 545

Miao Wang, Min Xie, Qinning Su, Xiongjun Fu

Direct Position Determination under the Presence of Sensor Phase Errors with a Calibration Emitter .... 550

Guizhou Wu, Min Zhang, Fucheng Guo, Liuli Wu

Fairness Based Power Allocation Optimization of Cooperative NOMA with SWIPT Network .................. 555

Zhenwei Zhang, Hua Qu, Jihong Zhao, Wei Wang, Shubei Wang

Multidimensional Scaling Analysis for Target Localization from Bistatic Range Measurements in Distributed MIMO Radars .................................................................................................. 561

Fuhe Ma, Fucheng Guo

Energy Efficient Transmission Design of Cooperative NOMA with SWIPT Network ................................ 566

Zhenwei Zhang, Hua Qu, Jihong Zhao, Wei Wang

Communication Design for Underwater Acoustic Positioning Networks .................................................. 573

Chengcai Lv, Binjian Shen, Xinxin Guo, Chengwei Zhu

High Energy Efficiency FPGA-based Accelerator for Convolutional Neural Networks Using Weight Combination .................................................................................................................. 578

Chenghao Shu, Wei Pang, Hao Liu, Shengli Lu

A Method of Radar Signal Feature Extraction Based on Fractional Fourier Transform ............................ 583

Chen Shiwen, Wang Gongming, Xing Xiaopeng, Huang Jie

Fast Generation of Perfect Gaussian Integer Sequences of Primitive Length ............................................ 588

Chong-Dao Lee, Yan-Haw Chen

Research on Anti-interference Performance of Sparsity-based SAR Imaging .............................................. 592

Guojing Li, Qinglin Lu, Wei Ye

Order-Adaptive Fractional-ORDER Moment-Based Estimation of Shape Parameter of K-distribution .... 597

Zhi-Yuan Li, Peng-Lang Shui, Peng-Jia Zou

A Point-Track Correlation Algorithm Based On Pixel Gradient and Direction ........................................... 601
Jiali Zhong, Chao Xu, Bo Feng, Shengtao Gu
Internal Threat Prediction Algorithm Based on VASG Model .................................................................606
Xiao He

Session 6—Signal Processing

Asynchronous Brain-computer Interface Intelligent Wheelchair System Based on Alpha Wave and SSVEP EEG Signals..................................................................................................................611
Gao Nuo, Zhai Wenwen, Lu Shouyin
Rolling Bearings Fault Diagnosis via 1D Convolution Networks ..................................................................617
Haiqin Qin, Kejun Xu, Likun Ren
Method for Monitoring Hydraulic Coke Removal Using Cylindrical Array Fiber Acoustic Sensors ........622
Yan Mao, Xiaoqiang Xu
Research on Satellite Signal Vector Tracking Based on Prefilter under High Dynamic Conditions ..........626
Zhiyong Tu, Tiejun Lu, Bo Bi
Denoising Reconstruction of Evaporation Duct Based on Variable Parameter Threshold Approximation Message Passing Method ........................................................................................................631
LIU Ge, RUI Guo-sheng, TIAN Wen-biao, DONG Dao-guang, ZHANG Ya-nan
Recovery of Undersampled Signals Based on Compressed Sensing .............................................................636
Weibo Deng, Maihu Jiang, Yingning Dong
A Multi-line Arbiter PUF with Improved Reliability and Uniqueness ............................................................641
Jing Wen, Minghui Huang, Ziheng Chen, Lijia Zhu, Shuai Chen, Bing Li
Exploiting Correlation in Distributed Cooperative Compressive Wideband Spectrum Sensing ...............649
Xingjian Sun, Lei Cao, Ramanarayanan Viswanathan
A Dynamic Bayesian Recovery Algorithm for Time Series Signals from Compressive Measurements .....654
Daoguang Dong, Guosheng Rui, Wenbiao Tian, Yang Bao, Ge Liu
Sparse Recovery via Iterative Minimization for the Recovery of Complex-Valued Target High-Resolution Range Profile ..................................................................................................................659
Kun Zhang, Peng-Lang Shui
A Novel Signal Processing Method Based on Cross-correlation and Interpolation for ToF Measurement 664
Sihao Sun, Shiyang Li, Luan Lin, Yaqi Yuan, Mingrui Li
Research on Muscle Fatigue Trend via Nonlinear Dynamic Feature Analysis of Mechanomyography Signal ..........................................................................................................................669
Wendu Jiang, Chunming Xia, Yue Zhang, Jiazhi Xie, Wanjun Feng
Signal Sorting Algorithm Based on Extended Histogram .............................................................................674
Hao Wu, Zhangmeng Liu, Xingwei Yan, Zheng Liu
Session 7—Computer Applications

Liver Segmentation in CT based on ResUNet with 3D Probabilistic and Geometric Post Process

Wendong Xu, Hong Liu, Xiangdong Wang, Yueliang Qian

A High-accuracy Target Tracking Method and Its Application in Acoustic Engineering

Haiyan Li, Fan Yin, and Chao Li

Inversion of SiO$_2$ Content in Surface Rock by Thermal Infrared Remote Sensing

Changbao Yang, Mengyao Zhu, Manting Gao, Qin Zhang

Improved Variable Step Size Regularized NLMS-Based Algorithm for Speech Enhancement

Mohamed Salah and Bassant Abdelhamid

Network Virtual Reality Clothing Silhouette Design Influencing Factors

Huang Yu-Che, Hsu Chia-Cheng

Signal Processing for Circular-Track Ringmap SAR Equipped on Multi-rotors UAV

Danqi Li, Yue Bao, Tianyue Shi, Xinhua Mao

Regularized Nonnegative Matrix Factorization with Real Data for Hyperspectral Unmixing

Li Sun, Wei Feng, Jing Wang

Racing APUF: A Novel APUF against Machine Learning Attack with High Reliability

Zheng Li, Lijia Zhu, Minghui Huang, Ziheng Chen, Shuai Chen and Bing Li

Automatic Reconstruction of Cross-Cut Chinese Document Shreds Based on the Feature of Typesetting and Strokes

Yunqiong Wang, Binggang Wu, Lijin Gao, Hongrong Yang

Skeleton Extraction Algorithm Based on Partial Intrinsic Symmetry

Fangjun Yi, Renyi Zhou

Road-Map Assisted Adaptive Constant Turn Model

Jihong Zheng, Meiguo Gao, Haojie Yu, Cai Wang

A Novel Method for Extracting Road Map from The Historical Measurement Set of Sensors

Haojie Yu, Meiguo Gao, Jihong Zheng, Cai Wang

A Low Latency Floating Point CORDIC Algorithm for Sin/Cosine Function

Nanxin Hou, Mingjiang Wang, Xiafeng Zou, Ming Liu

Influence Analysis of Atmospheric Refraction on TDOA and FDOA Dual-station Location Error of Air-to-ground and Its Correction

Shuqiang Zhang, Min Zhang, Fucheng Guo, Xi Li
Boundary Matched Human Area Segmentation for Chroma Keying Using Hybrid Depth-Color Analysis. 761
   Puji Lestari and Hans-Peter Schade

Study on Relative Error Distribution Ellipse of Submersible Vehicle to Avoid Threat Target. 768
   Xiaodong Yang, Yuhao Shan, Shihong Xing

Group Tracking Method with Adaptive Gate for Multiple Extended Objects Tracking. 773
   Qianlan Huang, Dawei Lu, Lei Hey, Ronghui Zhan, Jun Zhang

Extending Physical Multimedia Learning with Cognitive Theory of Multimedia Learning. 777
   Kien Tsong Chau, Wan Ahmad Jaafar Wan Yahaya, Malathi Letchumanan, Por Fei Ping

Bi-Fuzzy Clustering Algorithm by Augmented Granulation-Degranulation Mechanisms. 782
   Kaijie Xu, Weike Nie

Session 8—Processing Technology and Application

ISAR Resolution Enhancement Using Residual Network. 788
   Dan Qin, Diyang Liu, Xunzhang Gao, Jingkun, Gao

Fusion Evaluation of X-Ray Backscatter Image and Holographic Subsurface Radar Image. 793
   Jiaxuan Jiang, Chunlin Huang and Tao Liu

Feature Extraction Algorithm based on CSP and Wavelet Packet for Motor Imagery EEG signals. 798
   Gao Feng, Lu Hao, Gao Nuo

Nonparametric Bayesian Dictionary Learning for Microwave Radiation Image Recovery. 803
   Lu Zhu, Song Liu, Sainan Cao, Yuanyuan Liu

Target Position Compensation Algorithm for Unmanned Aerial Vehicle Radar Image. 808
   Xue Yao, Yu Liu, Guolong Cui, Xiangfei Nie

A Simulator for Three-dimension Radar Imaging of Complex Targets. 812
   Fengling Wu, Jianxiong Zhou

Aircraft Segmentation from Remote Sensing Image by Transferring Natural Image Trained Foreground Extraction CNN Model. 817
   Yanqing Zeng, Xin Niu, Yong Dou

Current Picture Referencing mode with Affine Model in VVC. 823
   Siqi Cao, Haiyang Han, Fan Liang, Jun Wang, Hongmei Liu

Digital Image Design Research of Popular Culture Exhibition. 827
   Huang Yu-Che, Chen Yan- Jie

Research on the Spatial Design of Digital Image Deconstruction Anddisplay. 832
   Huang Yu-Che, Liu Cheng-Yu

A Learning Based Image Quality Assessment Model Assisted with Visual Saliency and Gradient Features
Hai Liu, Huan Yang, Zhenkuan Pan, Baoxiang Huang and Jing Wang
Azimuth Ambiguity Erasing in Spaceborne Bistatic SAR Images ................................................................. 841

Feng He, Zhoudan Lv, Zaoyu Sun

Chia-Wen Tsai, Deng-Chuan Cai, Chung-Shun Feng, Yu-Che Huang
A Novel Fast Mode Decision Algorithm for AVS2 Intra Coding .................................................................. 850

Xiao Liu, Wei Yan, Guoqing Xiang, Lei Cheng, Yunyao Yan
A Dual-Link Residual Convolution Neural Network for Image Super-Resolution ........................................ 855

Xiaojie Duan, Tiesheng Fan, Xue Zhao
Fast Sub-pixel Prediction Based on Error Surface Fitting for HEVC .......................................................... 860

Lei Cheng, Wei Yan, Guoqing Xiang, Xiao Liu, Yunyao Yan
An Automatic Nuclei Cells Counting Approach Using Effective Image Processing Methods ................. 865

Mogeeb A. A. Mosleh, Abdul Aziz AL-Yamni, Abdu Gumaei
Gradient-Based Fast Intra Coding Decision Algorithm for HEVC ............................................................... 870

Yuting Wang, Jian Cao, Jun Wang, Fan Liang
Design of Intelligent Acquisition System for Tomato Leaf Area ................................................................. 875

Qingfeng Yang, Weiguo Fu, Bing Pan, Liang Zhang, Baolin Feng, Lu Li
Dielectric Information Extraction Based on Microwave Scattering Model ................................................. 879

Changbao Yang, Manting Gao, Chenxi Zhang, Xingzhe Li
A Large Bandwidth Sliding Spotlight SAR Image Formation Based on Generalized Chirp Scaling and Moving Band Chirp-z Transform .................................................. 885

Xing Chen, Zhen Dong, Tianzhu Yi, Zhihua He, Feng He, Yi Su
Superpixel Generation for PolSAR Images with Global Weighted Least-Squares Filtering and Linear Spectral Clustering ........................................................................................................ 891

Xianxiang Qin, Wangsheng Yu, Peng Wang, Tianping Chen, Huanxin Zou
Temporal Correlation Approach to Quality Improvement of Frame-by-Frame Localization Nanoscopy Images ................................................................................................................................ 896

Yi Sun
A Novel Block Image Encryption Algorithm Based on DNA Dynamic Encoding and Chaotic System .... 901

Xue Li, Xiaohui Li
Study on Super-Resolution of Images Obtained by Micro Satellite with CMOS Sensor ................................ 907

Xu Jun, Sun Tingting
Classification Research Based on Residual Network for Hyperspectral Image .......................................... 911
Xuefeng Liu, Yue Meng, Min Fu
A Connected Component Based Offshore Platforms Extraction Method of GF2 Multi-channel Optical Images .................................................................916

Yaxuan Fan, Qi Wang
Cell Counting Algorithm Based on YOLOv3 and Image Density Estimation .................................................................920

Dongdong Zhang, Pengfei Zhang, Lisheng Wang
To Assess the Influence of Artifacts on Motor Imagery Based BCI .................................................................925

Yao Chen, Chao Zhang, Xiaopei Wu

Session 9—Image Analysis and Transformation

Image Significance Region Detection Based on Global Color Clustering and Contrast .................................................................930
Chao Jia, Guangyu Wu, Fanshu Kong

Color Image Quality Assessment with Multi Deep Convolutional Networks .................................934
Yuan Yuan, Zeng Guoqiang, Chen Zhenwei, Gao Yudong

Mitigating EM Edge Artifacts Using Null-Space Smoothing .................................................................942
Bruce D. Smith

Missing Information Reconstruction of Three-order Tensor .................................................................948
Jin Jiang, Jie Wen, Xiang Liu

Distortion Correction Method of Bistatic ISAR Image Based on Phase Compensation .................................................................954
Baofeng Guo, Lin Shi, Chenxing Jia, Huixian Sun, Ning Han

Three Dimensional Image Reconstruction Method Based on Two Dimensional Radar Image and Optical Image .................................................................959
Xue Yao, Guolong Cui, Yu Liu, Xiangfei Nie

Research of Restoration Technique of Cigarette 32-bit Security Code in Strong Interference Environment .................................................................966
Zuo Huahong, Ni Jing, Han Ping

Ultrasound Images Denoising Based on Calculus of Variations .................................................................970
Yating Fu, Junhao Liu, Jing Xu, Danyan Gu, Kun Yang

Color Image Segmentation Via Wavelet Frames .................................................................975
Jianbin Yang, Enlin Zhang, Cong Wang

SAR Image Change Detection Based on Generalized Gaussian Distribution MRF Model .................................................................980
Shuwen Xu, Gang Zhang

A Novel Compression Method Based on Bandlet and Compressive Sensing for Ultrasound Image .................................................................985
Qiong Zhang, Bin Li, Minfen Shen
Speckle Noise Removal for SAR Image Based on G₀ Distribution Combining Total Variation and Total Curvature

Yunping Mu, Baoxiang Huang*, Zhenkuan Pan, Huan Yang, and Yajing Li

An Enhanced V-BM3D Algorithm for VideoSAR Denoising Combined with Temporal Information

Zihan Li, Zhen Dong, Anxi Yu, Zhihua He, Tianzhu Yi

Image Denoising Based on Wavelet Transform and BM3D Algorithm

Qinning Su, Yong Wang, Yiyao Li, Chengyan Zhang, Ping Lang and Xiongjun Fu

Infrared Image Super Resolution Using GAN With Infrared Image Prior

Shaowen Liu, Yifan Yang, Qi Li, Huajun Feng, Zhihai Xu, Yueting Chen, Lei Liu

CNN Model for Screen Content Image Quality Assessment based on Region Difference

Ruidong Li, Huan Yang, Teng Yu and Zhenkuan Pan

Image Restoration Using Optimized Weiner Filtering Based on Modified Tikhonov Regularization

Suphongsaa Khetkeeree and Sompong Liangrocapart

A Method Based on Multi-source Feature Detection for Counting People in Crowded Areas

Gong songchenchen, El-Bay Bourennane

Underwater Image Enhancement by Gaussian Curvature Filter

Jiaying Xiong, Yuxiang Dai, Peixian Zhuang

Pan-Sharpening with a Gradient Domain Guided Image Filtering Prior

Peixian Zhuang

Artifact Suppression for Passive Cavitation Imaging Using U-Net CNNs with Uncertainty Quantification

Yushi Liu, Brian Tracey, Shuchin Aeron, Eric Miller, Tao Sun, Nathan McDannold, James Murphy

Image Segmentation Method Based on Spiking Neural Network with Adaptive Synaptic Weights

Donghao Zheng, Xianghong Lin, Xiangwen Wang

Different Versions of Entropy Rate Superpixel Segmentation For Hyperspectral Image

Yiwei Tang, Liaoying Zhao, Lang Ren

A Mobile Phone Screen Cover Glass Defect Detection MODEL Based on Small Samples Learning

Yongfa Lv, Ling Ma, Huiqin Jiang

Author Index