

2022 15th International Congress on Image and Signal Processing, BioMedical Engineering and Informatics (CISP-BMEI 2022)

**Beijing, China
5-7 November 2022**

Pages 1-543



**IEEE Catalog Number: CFP22J14-POD
ISBN: 978-1-6654-8888-4**

**Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP22J14-POD
ISBN (Print-On-Demand):	978-1-6654-8888-4
ISBN (Online):	978-1-6654-8887-7

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

CT Image Segmentation for Preoperative Tracker Registration of Robot-Assisted Surgery	1
<i>Siru Feng, Yu Wang, Jiangzhen Guo</i>	
Active and Passive Radar Target Fusion Recognition Method Based on Bayesian Network	7
<i>Ruoyun Li, Yuxi Zhang, Jinping Sun</i>	
Research on the Non-Contact Physiological Parameter Measurement Technology Based on Imaging Photoplethysmography.....	12
<i>Ying Zhu, Dexin Kong, Yumeng Mao, Ying Yu</i>	
Image Block Cipher Based on Parameterized Cosine Transform Over Finite Fields.....	18
<i>Xiaochen Dong, Jianhua Wu, Xishun Zhu</i>	
Small Object Detection for Intelligent Abnormal Event Detection in Power Distribution Networks	24
<i>Yize Tang, Yi Zhang, Wenjie Kong, Lanxin Qiu, Yuxiang Lv, Hao Wu</i>	
Real-Time Analysis of Intra-Pulse Characteristics Based on Instantaneous Frequency	29
<i>Tianhao Wang, Haiqing Jiang</i>	
Multi-Modal Magnetic Resonance Images Segmentation Based on an Improved 3DUNet.....	35
<i>Yitong Luo, Chenxi Li, Yiman Sun, Hong Fan</i>	
A Novelty Adversarial Loss for Classifying Unbalanced Anomaly Images	41
<i>Wenqi Huang, Qunsheng Zeng, Peng Li, Ailing Jia, Jie Song, Mingli Song</i>	
An Object Detection Method Based on Improved YOLOX.....	47
<i>Peng Li, Wenqi Huang, Yang Wu, Senjing Yao, Ailing Jia, Jie Song, Mingli Song</i>	
A P300 BCI Calibration-Free Algorithm Based on Intersubject Transfer and Reinforcement Learning	53
<i>Xuewei Chen, Zhihua Huang</i>	
Recognizing the Consciousness States of DOC Patients by Classifying EEG Signal	59
<i>Junjie An, Chaoqun Weng, Chenghua Wang, Zhihua Huang</i>	
A Multi-Scale EEGNet for Cross-Subject RSVP-Based BCI System.....	65
<i>Xuepu Wang, Yanfei Lin, Ying Tan, Rongxiao Guo, Xiaorong Gao</i>	
An Iterative Majorization-Minimization Approach to Deep Denoiser-Plugged Image Inpainting	70
<i>Hengyuan Zhao, Wenze Shao, Fukun Zhu, Peng Yan, Qi Ge, Zhuang Miao</i>	
Mental State Identification Based on the Classification of EEG Signals	78
<i>Yihan Liu, Zhihua Huang</i>	
An Individual Identification Method to Integrate c-VEP and an Affordable Cognitive Task	84
<i>Guojie Ou, Zhihua Huang</i>	
A Clinical EEG Research Platform to Support Progressive Model Construction	89
<i>Canbin Chen, Zhen Mei, Zhihua Huang</i>	
Vision-Guided Speaker Embedding Based Speech Separation	95
<i>Yuanjie Deng, Ying Wei</i>	

UGAN: Semi-Supervised Medical Image Segmentation Using Generative Adversarial Network	101
<i>Yuan Zheng, Beizhan Wang, Qingqi Hong</i>	
Flexible Pressure Sensor Inside Cardiovascular: A Pilot Study on the 3D Printed Artificial Heart System	107
<i>Yuzhen Li, Yushi Li, Xiang Qian</i>	
Capacitive Humidity Sensors Based on PVA/CAB Compound Film with Potassium Acetate-Enhanced Sensitivity	113
<i>Songping Yao, Qia Zhang, Wentai Ding, Yonghua Zhang, Jian Zhang, Chaolun Wang</i>	
Arrhythmia Classification on Different Time Windows Using CSR-BiGRU Network	118
<i>Yesong Liang, Liting Zhang, Xinge Jiang, Ying Wang, Rui Huo, Shoushui Wei</i>	
Blockchain-Based User Data Storage and Protection in 5G Core Network	125
<i>Lei Yang, Fanke Meng, Boyuan Yu, Zhan Xu, Yi Gong</i>	
Electric Field Distribution Characteristics of Human Head Under UHV DC Transmission Line.....	131
<i>Shougang Wang, Anxin Zou, Tao Yang, Yongming Li, Yan Liu</i>	
A Geometric View to Reweighted Graph Total Variation Blind Deconvoluton: Making it Faster and Better	136
<i>Wen-Ze Shao, Jin-Ye Li, Wei-Wei Luo, Mei-Lin Liu, Haisong Deng</i>	
Lightweight Deep Network for the Classification of Breast Cancer Histopathological Images.....	141
<i>Muhammad Waqas, Tomas Maul, Iman Yi Liao, Amr Ahmed</i>	
Analysis and Simulation of Interference Effects on CSK Modulation Systems.....	147
<i>Lele Guan, Zhan Xu, Lu Tian, Chenrui Shi</i>	
Acceleration of Multi-B-Value Multi-Shot Diffusion-Weighted Imaging Using Interleaved Keyhole-EPI and Locally Low Rank Reconstruction.....	154
<i>Xin Tang, Juan Gao, Fan Yang, Chenxi Hu</i>	
An Unsupervised Transfer Learning Model Based on Joint Information for Sleep Stage Classification	160
<i>Ruichen Li, Huan Wei, Bei Wang</i>	
Data Privacy Protection from the Perspective of GDPR - A Case Study on E-Learning Platform “SHCneo”	165
<i>M. A. Jiayi Chen, Jingwei Xu</i>	
3D-MFC: A Method for Computing Critical Gait Parameters Based on Virtual Marker Tracking	170
<i>Hao Chen, Wen-Ming Chen, Li Chen, Xiong-Gang Yang, Xin Ma</i>	
Deep Learning-Based Channel Estimation for HPO-MIMO Systems in IoV Scenario	175
<i>Xinru Li, Qingyu Li, Fanke Meng, Zixin Xu, Zhan Xu, Yi Gong</i>	
Design of ECG Acquisition and Display System Based on ADS1292R and STM32 Microcontroller	180
<i>Yu-Ping Su</i>	
A Deep Learning Based Method for COVID-19 Classification Using Chest CT Images	185
<i>Guang Li, Chengwei Sun, Zeyu Sun</i>	
Optimization of the Modified Gerchberg-Saxton Algorithm Based on the Hybrid Phase	190
<i>Jianfeng Zuo, Junmin Leng, Yiping Fu</i>	

NF-BCSNet: A Normalizing Flow-Based Network for Block-Based Image Compressed Sensing	196
<i>Can Chen, Yutong Wu, Junjie Sun, Jialuo Chen, Yuhang Zhou, Dengyin Zhang</i>	
PCANet Combined with Residual Connection for Hyperspectral Image Classification	202
<i>Mianpeng Li, Xiang Xu</i>	
Understanding Geometry for Point Cloud Segmentation Via Covariance	209
<i>Jiaping Qin, Jingyu Gong, Zhengyang Feng, Xin Tan, Lizhuang Ma</i>	
Detection of Heart Failure Using a Convolutional Neural Network Via ECG Signals	215
<i>Jad Botros, Farah Mourad-Chehade, David Laplanche</i>	
Adaptive Signal Denoising of Fiber-Optic Gyroscope Based on Improved Current Statistical Model.....	220
<i>Yejun Zhang, Wenguang Jin</i>	
A Multi-Modal Feature Layer Fusion Model for Assessment of Depression Based on Attention Mechanisms.....	225
<i>Congcong Wang, Decheng Liu, Kemeng Tao, Xiaoxiao Cui, Gongtang Wang, Yuefeng Zhao, Zhi Liu</i>	
Dual-Enhanced-CNN for Few-Shot Object Detection in Remote Sensing Images	231
<i>Wanyue Jiang, Chaojie Wang, Liyue Li, Sheng Wang</i>	
Sensor Fault Diagnosis Based on Multi Generator Countermeasure Network.....	237
<i>Linxuan Wang, Xiangwei Kong, Hong Li</i>	
Partial Face Recognition Based on Sparse Non-Local Regularization Weighting	244
<i>Qing Gao, Shibin Xuan, Shiqi Xu, Kaicheng Xiong</i>	
Sentiment Analysis Based on Deep Residual Bidirectional Gated Recurrent Unit Neural Networks.....	251
<i>Yu Xiang, Di An, Yaping Zhang</i>	
An Application of Knowledge Map in Intelligent Education	258
<i>Wang Lintao, Yu Yuanhui, Guo Qisong, Li Xinxin</i>	
Effective Network Analysis of Schizophrenia Based on EEG Source Signals	263
<i>Liqing Geng, Yi Chen, Ziyu Hu, Chunxiao Han</i>	
An Application of Network Communication Technology in Classroom Cloud Notes.....	268
<i>Zhenhao Zhu, Yuanhui Yu, Yan Wang</i>	
SAResU-Net: Shuffle Attention Residual U-Net for Brain Tumor Segmentation	274
<i>Yuqing Zhang, Yutong Han, Dongwei Liu, Jianxin Zhang</i>	
A Study of Review Hot Words Extraction Technology Based on the LSTM Web Review Validity Model	280
<i>Yue Li, Yuanhui Yu, Yaqin Su, Tao Yang, Xu Zhang, Jiahong Shi</i>	
Design and Analysis of Data Sharing Scheme Based on Blockchain and Trusted Computing	286
<i>Junyi Wang, Xiaoming Hu</i>	
Geometric Constraints for Establishing Point Correspondence Between Stereo Images	291
<i>Yuanbin Wang</i>	
A Weight Pruned Convolutional Neural Network for Garbage Image Classification.....	297
<i>Yuchen Wang, Guangtai Zhao, Xiaoguang Li</i>	

Analysis of Epileptic EEG Based on Improved Sample Entropy Algorithm	303
<i>Jianping Wu, Jun Wang</i>	
Pm2.5 Prediction in Nanjing Based on Cnn-lstm.....	307
<i>Ye Yao, Jun Wang, Li Yang</i>	
Fast Image Restoration Using a Simplified Matrix-Type Recurrent Neural Network	311
<i>Liqing Huang, Youshen Xia</i>	
Research on Digital Watermarking Algorithm Based on Discrete Cosine Transform	317
<i>Yifang Duang, Yi Wang, Congjun Cao, Xiaolin Zhang</i>	
Automatic Identification of Printed Circuit Board Vias Based on YOLO Algorithm.....	323
<i>Jie Ji, Bei Wang, Jianming Huang, Yuezhong Tang</i>	
Face Recognition with Robust Matrix Factorization	329
<i>Qing Li</i>	
A Novel Continuous Beam Energy Selector for Photon Intensity-Modulated Radiotherapy.....	334
<i>Xile Zhang, Fugen Zhou, Bo Liu, B. S. Tianyu Xiong, Xiangzhi Bai, Qiuwen Wu</i>	
Hurst Exponent Analysis of Schizophrenia Electroencephalogram Based on Multi-Point Fractional Brownian Bridge	340
<i>Congzhou Zhong, Wenpo Yao, Wanyi Yi, Jun Wang, Dengxuan Bai, Qiong Wang</i>	
Muscle Fatigue State Classification Based on Blood Flow Bioimpedance	345
<i>Hao Guo, Li Ke, Qiang Du, Song Guo</i>	
Bioimpedance Detection and Analysis for the Prefrontal Functional Area.....	351
<i>Yuzhe Wang, Qiang Du, Li Ke, Yunfeng Bai</i>	
A Sub-1 ppm/°C TC Bandgap Voltage Reference with High Power Supply Rejection.....	357
<i>Jiapeng Shen, Shengxi Diao</i>	
An Identification Recognition Method Based on the Optimization Mechanism of Emotional EEG Module	361
<i>Xin Xu, Jiaxing Zhang</i>	
A Unity-Gain Buffer with 1.6GHz Bandwidth and 1900V/μs Slew Rate Based on an OPA Adopting Cascaded Class-AB Structure.....	369
<i>Xueping Wang, Xiaorui Zhu, Shengxi Diao</i>	
A Power Separation Fast Response Brown-Out Detection Structure	373
<i>Shiming Liang, Shengxi Diao</i>	
A Novel Crack Segmentation Method Based on Morphological-Processing Network	377
<i>Fan Zhao, Yu Chao, Xi Liu, Linyun Li</i>	
A Comparative Study on RepVGG and ResNet for Monocular 3D Object Detection	383
<i>Peng Yan, Wenze Shao</i>	
A Novel Curved Surface Text Detection Method Based on Multi-Channel Pseudo-Color Images	389
<i>Fan Zhao, Zhiwei Zhang, Haining Li, Zhiqian Wen, Ni Li</i>	
IoT Tag Technology-Based Power Patrol Prevention Enhancement System.....	395
<i>Yangpeng Xiao, Yinggang Xie, Xuewei Peng, Leisheng Yang</i>	

IOT Farming System for Pelagic Fisheries Based on Blind Satellite Communication	400
<i>Xuewei Peng, Yinggang Xie, Yangpeng Xiao, Haohan Zhang, Shuolin Qu</i>	
Aiding Alzheimer's Disease Diagnosis Using Graph Convolutional Networks Based on rs-fMRI Data	406
<i>Zhiwei Qin, Zhao Liu, Ping Zhu</i>	
A Novel Scheme Based on Variational Mode Decomposition and Multiple Denoising Technologies for Heartbeat Rate Estimation	413
<i>Yuqing Song, Yunxue Liu, Wenqiang Fan, Zekun Chen, Zhen Cao, Yan Zhang</i>	
The Effect of Skin Melanin Concentration on Wrist Reflectance Photoplethysmography Based on Monte Carlo Simulation	420
<i>Hangxing Hu, Jin Li, Xiang Chen</i>	
Graph Convolutional Network with Attention Mechanism for Discovering the Brain's Abnormal Activity of Attention Deficit Hyperactivity Disorder.....	426
<i>Aiju Yu, Longyun Chen, Chen Qiao</i>	
Fitness Action Counting Based on MediaPipe	431
<i>Xiangying Li, Mingwei Zhang, Junnan Gu, Zhi Zhang</i>	
FAD-Net: Fake Images Detection and Generalization Based on Frequency Domain Transformation	438
<i>Xiaoning Liu, Jinhong Liu, Peiyao Guo, Dongcheng Tuo, Shaotong Tian, Yi Jiang</i>	
A Two-Step Training Transformer Framework for Recovering Hyperspectral Images from RBG Images	445
<i>Xuran Zhou, Chenglin Wu, Guannan Chen</i>	
Design of High-Speed Data Acquisition System for High Frequency Ultrasonic Radio-Frequency Echo Signals	450
<i>Xiaochun Wang, Zemeng Li, Jianjun Ji, Sheng Zhou</i>	
Parameter Identification and Nonlinear Analysis of the Continuous Bio-Dissimilation Process of Glycerol.....	456
<i>Jingshuo Zhang, Gongxian Xu</i>	
Facial Attribute Editing Based on Independent Selective Transfer Unit and Self-Attention Mechanism	462
<i>Xiaoning Liu, Peiyao Guo, Jinhong Liu, Dongcheng Tuo, Shiyu Lei, Yuejin Wang</i>	
A Two-Step Regularization Reconstruction Algorithm for Magnetic Particle Imaging	470
<i>Dan Liu, Li Ke, Qiang Du, Wanni Zu</i>	
Coarse-to-Fine Tranformer for Articular Disc of the Temporomandibular Joint Segmentation	476
<i>Chenglin Wu, Xuran Zhou, Guannan Chen</i>	
An Improved IRNet for Instance Segmentation Based on Image-Level Supervision	481
<i>Haojiang Yao, Ya-Li Hou, Rui Wang, Xiaoli Hao, Zhijiang Hou</i>	
Eyes Recognition for Inner Canthus Temperature Detection Using YOLOv5 Algorithm	486
<i>Malak Ghourabi, Farah Mourad-Chehade, Aly Chkeir</i>	
Big Data Retrieval and Its Application in Image Annotation and Reconstruction	491
<i>Hui Liu</i>	

Design and Implementation of Minimum Shift Keying Signals Based on Current Field Through-the-Earth Communications	494
<i>Zhan Xu, Xiaowen Wen, Gan Zhang</i>	
A Learning Rate Optimization Method for Model Convergence of Hyperspectral Image Classification	500
<i>Chenming Li, Sikang Yao, Hongmin Gao, Yunfei Zhang</i>	
Design and Implementation of the 16 Channels FDA Radar Realtime Signal Processing System	506
<i>Yanqin Huang, Zhan Xu, Tianyu Lu, Xiaoying Chen, Cheng Wang</i>	
Image Reconstruction of ERT Center Region Based on Improved Spatial Adaptive Regularization Algorithm	512
<i>Qian Lu, Hongwei Ren, Yubao Han, Xingkun Dong, Xin Cheng, Lei Qin</i>	
Design of a High-Precision Simulation System for Multi-Mode Spaceborne SAR Echo Generation	518
<i>Tianyu Lu, Zhan Xu, Xiaoying Chen, Yanqing Huang, Cheng Wang</i>	
The Effect of COVID-19 on Tourism Affection: A Pleasure-Arousal-Dominance Framework Perspective.....	524
<i>Kailin Zhou, Zhong Yao, Wuhuan Xu</i>	
An End-to-End Image Feature Representation Model of Pulmonary Nodules.....	529
<i>Jinqiao Hu</i>	
Band Selection Method Based on Orthogonal Projection and Cross Entropy.....	533
<i>Hui Zhou, Zhaoxin Yue, Dan Yao</i>	
Retrosynthesis Prediction Based on Graph Relation Network	539
<i>Zhaoxu Dong, Zhao Chen, Qian Wang</i>	
Predicting Lysine Phosphoglyceralylation Sites Using Bidirectional Encoder Representations with Transformers & Protein Feature Extraction and Selection	544
<i>Songning Lai, Xifeng Hu, Jing Han, Chun Wang, Subhas Mukhopadhyay, Zhi Liu, Lan Ye</i>	
Residual Self-Attention Based Cortical Surface Reconstruction.....	549
<i>Mujun An, Congcong Wang, Kemeng Tao, Jing Han, Kun Zhao, Zhi Liu</i>	
FEA Modelling and Simulation Analysis: The Effects of Electrical Signals on the Characteristics of CMUT	555
<i>Jie Liu, Haodong Chen, Quanfang Chen</i>	
Visual Perception Based Blind Stereoscopic Omnidirectional Video Quality Assessment	560
<i>Lijuan Feng, Mei Yu, Yang Song, Ruitao Chen, Liuyan Cao, Gangyi Jiang</i>	
Common-View Time Transfer with BeiDou New Navigation Signals	568
<i>Zhilong Ren, Hang Gong, Jing Peng, Guangfu Sun</i>	
Deep Video Compressive Sensing with Attention-Aware Bidirectional Propagation Network.....	573
<i>Chao Zhou, Can Chen, Dengyin Zhang</i>	
Computational Fluid Dynamics Analysis of Portal Vein Blood Flow Characteristics in Children Undergoing Liver Transplantation	578
<i>Chen Guo, Liwei Hu, Yumin Zhong, Jinlong Liu</i>	

A Preliminary Exploration on Dynamic Virtual Channel for Epiretinal Stimulation: A Modelling Study.....	584
Zhengyang Liu, Xiaoyu Song, Shiwei Zheng, Liming Li	
Multi-Scale Multi-View Model Based on Ensemble Attention for Benign-Malignant Lung Nodule Classification on Chest CT	589
Ruoyu Wu, Hong Huang	
GNSS Carrier Tracking Via Variational Adaptive Kalman Filter.....	595
Song Li, Pengcheng Ma, Chunjiang Ma, Xiaomei Tang, Feixue Wang	
Research on Carotid Ultrasonic Image Detection Based on Convolutional Neural Network.....	601
Xiaoyu Sui, Yankun Cao, Jia Mi, Kemeng Tao, Jing Han, Kun Zhao, Chun Wang, Zhi Liu	
AI-Assisted Analysis to HIV Lateral Flow Test with a Hybrid Model Running on a Distributed Diagnosis System	606
Xinying Huang, Xiaobin Dong, Wenbo Yang, Xiaodan Jiang, Luyao Liu, Lulu Zhang, Xianbo Qiu, Xiaolei Zhang, Dong Wang, Shengxiang Ge, Ningshao Xia, Wei Li	
Development of Liver Virtual Surgery Software Based on SPECT Images	612
Sijiao Yu, Lei Sun, Qingyang Wei	
3D Point Cloud Target Recognition Based on the Bi-LSTM and PointCNN Network.....	618
Peng Cheng, Qian Zhu, Wenguang Wang	
Point Cloud Registration Based Track Correlation Method	622
Wenchao Lyu, Yang Song, Guanghong Liu, Kuoye Han, Jupeng Li	
Mask Recognition Scheme Based on Improved Vision Transformer.....	627
Jianfei Ma, Pengfei He, Chenglin Li, Tongjing Zhang, Dawei Liang	
Constant Current Precision of Flyback LED Driver with Primary Side Control.....	632
Qing Ding	
EEG-Based Epileptic Seizure Detection Model Using CNN Feature Optimization	637
Ruoyu Du, Jingjie Huang, Shujin Zhu	
Real-Time Lung Markings Tracking for Percutaneous Puncture Robots.....	643
Tianliang Fan, Chenhaowen Li, Ziwei Wan, Qianghao Huang, Luming Wang, Honghai Ma, Chunlin Zhou	
Predicting Invasive Coronary Perfusion Pressure Using Noninvasive Electrocardiogram and Photoplethysmography Based on Machine Learning for Cardiopulmonary Resuscitation	650
Shuxin Chen, Lijun Jiang, Ke Li, Chang Pan, Jiaoqiao Pang, Feng Xu, Jiali Wang, Yuguo Chen	
Monitoring the Changes of Electroencephalogram During Cardiopulmonary Resuscitation.....	656
Chang Guo, Fengyang Xu, Ke Li, Chang Pan, Jiaoqiao Pang, Jiali Wang, Feng Xu, Yuguo Chen	
Assessment of Cerebral Blood Flow Based on Bioimpedance.....	662
Zhenfeng Ren, Yanjing Wang, Qianxiang Zhou, Zhongqi Liu, Baoming Chen, Chao Shan	
Head Model Simplification Methods Based on Validity Estimate for Transcranial Magnetic Stimulation	667
Shujie Lu, Jiao Li, Haoyu Jiang, Wenli Liu, Baoyu Hong, Pu Zhang, Chengwei Li	

A Review of the Genetic Algorithm and JAYA Algorithm Applications	673
<i>Raed Abu Zitar</i>	
A Restructable Strategy of Information Transmission Security Architecture in Edge Computing	680
<i>Wenya Song, Jinwei Tian, Xiaole Li, Xing Wang</i>	
Improving Process for Attenuation Scintigraphic Images	686
<i>Karen Zig, Andrei Doncescu, Jean-Luc Henry, Jimmy Nagau, Jean Velin</i>	
Design and Implementation of Integrated Simulation Software for Multichannel Modified Electroconvulsive Therapy	692
<i>Wanxin Cheng, Xiang Chen, Hui Zhang, Changjiang He, Han Yang, Jin Li</i>	
Animal Experimental Device for Vagus Nerve Stimulation in the Treatment of Chronic Heart Failure.....	698
<i>Lu Zhang, Wenjun Xie, Chao Guo, Jingyu Zhang, Hua Jin, Jin Li, Xiang Chen</i>	
Design of 20Gb/s PAM4 Transmitter with 2-tap FFE.....	703
<i>Xuena Liu, Zhensong Li, Hao Wen, Min Miao</i>	
An Improved Visual SLAM Algorithm Based on Wide-Angle Camera Correction Model.....	709
<i>Jiaxin Huang, Guangyu Fan, Lei Rao, Songlin Cheng, Xiaoyong Song, Niansheng Chen, Zhaohui Xu</i>	
Plate Contour Recognized Algorithm Based on Depth Histogram Threshold Segmentation.....	715
<i>Zhenyu Liu, Yaoqi Liu, Meng Su, Haibing Guo, Pengchao Li</i>	
A Simulation System of Space Object Images for Space Situation Awareness	721
<i>Gaojin Wen, Yun Xu, Changhai Liu, Ziwei Zhou</i>	
Study on the Impact of High-Voltage Generator Setting Time to CT Dose Measurement Accuracy	727
<i>Xiujian He, Weikang Zhang</i>	
Research on Smooth Edge Feature Recognition Method for Aerial Image Segmentation	733
<i>Heng Wang, Yanrong Yuan, Chuangang Zhuang, Rui Shi, Jiamei Zhao, Xinyi Guo, Jintian Tang</i>	
A Power-Efficient Optimizing Framework FPGA Accelerator for YOLO	738
<i>Shunan Li, Chongchong Yu, Tao Xie, Wenbin Feng</i>	
Research on Discrimination Method of Superpixel Clustering Based on Support Vector Machine	744
<i>Heng Wang, Jiamei Zhao, Weihe Shen, Hai Jiang, Zhilong Zhang, Jintian Tang</i>	
The Design of Automated Validation System for Satellite Data Transmission System Based on AOS.....	749
<i>Zheren Long, Lede Qiu, Wenliang Zhu, Liangyu Zhong, Zhicao Song, Wei Song</i>	
Classification of Chest X-Ray Images Based on Superpixels and Deep Learning Models.....	755
<i>Saichao Lu, Yingmei Qin, Yanqiu Che, Haibing Guo</i>	
Fire Image Augmentation Based on Diverse Alpha Compositing for Fire Detection	759
<i>Chengming Liu, Yihui Liang, Wen Wen</i>	
Intelligent Evaluation of the Course of Atrial Fibrillation Using Transfer Learning	765
<i>Chen Sun, Chunpu Li, Hongye Huo, Gaoyan Zhong, Sen Liu, Aiguo Wang, Xintao Deng, Cuiwei Yang</i>	

A Two-Level Cascade Detection Algorithm for X-Band Marine Radar	770
<i>Jifa Zhang, Jinping Sun, Huan Ma, Yutao Zhang</i>	
Classifying Insect Pests from Image Data Using Deep Learning	775
<i>Md. Raiyan Bin Mohsin, Sadia Afrin Ramisa, Mohammad Saad, Shahreen Husne Rabbani, Salwa Tamkin, Faisal Bin Ashraf, Md. Tanzim Reza</i>	
Public Opinion Evolution and Communication Stages in Complex Network	781
<i>Shan Liu, Xiaoqing Wu</i>	
Remote Sensing Extraction of Photovoltaic Panels in Desert Areas Based on Feature Optimization.....	787
<i>Hongyu Zhao, Zhiping Yin</i>	
Study on the Application of Small CNN in Arrhythmia Classification.....	793
<i>Yongjian Li, Liting Zhang, Yonglin Wang, Baokun Han, Lei Liu, Shoushui Wei</i>	
EEG-Based Emotion Recognition by Using Machine Learning and Deep Learning	799
<i>Wenhui Tong, Li Yang, Yingmei Qin, Yanqiu Che, Chunxiao Han</i>	
Design and Implementation of a Cloud Particle Shape Recognition Algorithm Based on MATLAB	804
<i>Junyao Huo, Minsong Huang, Ruili Jiao</i>	
A Multi-Target ISAR Imaging Method Based on Zhang-Suen Thinning and Radon Transform.....	809
<i>Hongxu Li, Fulin Su</i>	
Adaptive Pixel Pair Evaluation Method for Image Matting	814
<i>Qiping Huang, Yi Liu, Fujian Feng, Yihui Liang</i>	
Cervical Cancer Screening on Multi-Class Imbalanced Cervigram Dataset Using Transfer Learning	822
<i>Manisha Saini, Seba Susan</i>	
IANet: Important-Aware Network for Microscopic Hyperspectral Pathology Image Segmentation	828
<i>Weijia Zeng, Wei Li, Ran Tao</i>	
Multi-Dimensional Opinion Chaos Synchronization Based on Multi-Layer Complex Networks	834
<i>Shan Liu, Ruixing Tao</i>	
Denoising Low-Dose CT Images Using a Multi-Layer Convolutional Analysis-Based Sparse Encoder Network.....	839
<i>Yanqin Kang, Jin Liu, Tao Liu, Jun Qiang</i>	
Partially Occluded Self-Taught Learning Via Residual Connection Union	845
<i>Bin Kang, Jianchun Ye, Songlin Du, Xin Li</i>	
Evaluation and Prediction of Elderly Thermal Comfort at Varying Ambient Temperatures Based on Electroencephalogram Signals and Machine Learning	850
<i>Jin Zhan, Wenjing He</i>	
Research on an Effective Human Action Recognition Model Based on 3D CNN	855
<i>Yupeng Wang, Shuqing He, Xiaowei Wei, Samuel Akolade George</i>	
Zero-Shot Audio Classification Using Synthesised Classifiers and Pre-Trained Models	861
<i>Zheng Gu, Xinzhou Xu, Shuo Liu, Björn Schuller</i>	
LIGHT-DCSFN: A Light Cross-Scale Fusion Network for Single Image Dehazing.....	867
<i>Wensheng Han, Dengyin Zhang, Xiaofei Jin</i>	

A Novel Channel Estimation Method Based on Deep Neural Network for OTFS System.....	873
<i>Qingyu Li, Yi Gong, Fanke Meng, Lingyi Han, Zhan Xu</i>	
An Optical Guidance Method for Robotic Intramuscular Injection System.....	879
<i>Yunlong Zhu, Wenlong Zhang, Biao Yan, Rongqian Yang</i>	
LP3DAM: Lightweight Parallel 3D Attention Module for Violence Detection.....	886
<i>Jiehang Deng, Yusheng Zheng, Wei Wang, Kunkun Xiong, Kun Zou</i>	
Defect Detection of Biscuit Packaging Based on Level Set Map.....	894
<i>Kunkun Xiong, Wensheng Li, Shuai Dong, Yuanlie He, Zhihua Yang</i>	
Simultaneous Segmentation of Layers and Fluids in Retinal OCT Images.....	901
<i>Nchongmaje Ndipenoch, Alina Miron, Zidong Wang, Yongmin Li</i>	
On the Impact of Digital Back Propagation Nonlinearity Compensation in Non-Repeated Transmission WDM Systems	907
<i>Tian Gao, Xin Zhang, Cuiyun Du</i>	
MA ² -FPN for Tiny Object Detection from Remote Sensing Images	911
<i>Saiwei Li, Qiang Tong, Xuhong Liu, Zhanqi Cui, Xiulei Liu</i>	
Numerical Simulation of Selective Blocking Properties of Vagus Nerve a Fibers	919
<i>Jiao Zhao, Hua Jin, Jin Li, Xiang Chen</i>	
Remote Heart Rate Estimation in Low-Light Environments Based on Eulerian Video Magnification	925
<i>Lijia Liu, Gang Wang</i>	
A Feasible Way to Assess the Lower Extremity Motor Function of Stroke Patients - A Preliminary Study.....	930
<i>Sen Liu, Hongyu Xie, Han Yuan, Jing Tian, Cuiwei Yang, Yi Wu</i>	
Intelligent Detection of Hypokalemia Based on 12-Lead ECG Using Two-Stream Deep Learning Model	935
<i>Yueyi Wang, Gaoyan Zhong, Ya'Nan Wang, Qiang Zhu, Jiayong Xie, Xintao Deng, Aiguo Wang, Cuiwei Yang</i>	
A Retinal Image Restoration Method Based on Generative Adversarial Network.....	941
<i>Rong Zhao, Weidan Yan, Dengyin Zhang</i>	
A Microwave Imaging Method Based on Improved Contrast Source Inversion for Brain Stroke Detection	946
<i>Ruoxuan Wang, Zekun Zhang, Heng Liu, Xinguang Yu, Rui Zong, Binhua Wang, Xianchao Zhang</i>	
Design of Data Acquisition and Signal Processing System for STAR sTGC Detector.....	951
<i>Yingjie Li, Feng Li, Shuang Zhou, Peng Miao, Ge Jin</i>	
Multidimensional Webshell Detection Method Based on Deep Learning.....	957
<i>Kui Jiang, Zhihang Yu, Xiaolei Chen, Yaoyang Su</i>	
An Automatic Integration Deployment Framework for Telecom Cloud Network	963
<i>Qingyun Meng, Deheng Li, Qian Wang, Wanyi Zhu, Chunyu Shi, Zhilan Huang</i>	
Attention Based Speckle Reduction for Optical Coherence Tomography in Ophthalmology and Dentistry	969
<i>Hanya Ahmed, Qianni Zhang, Robert Donnan, Akram Alomainy</i>	

Location Awareness Method for ADS-B Signal Source Based on Satellite.....	975
<i>Weicai Yang, Wen Ren, Jiapei Zhang, Shanbin Shi, Xuehui Yu, Guangyu Tian, Haonan Cao</i>	
Video Human Action Recognition Algorithm Based on Double Branch 3D-CNN	980
<i>Yu Wang, Jiaxi Sun</i>	
Aircraft Recognition Using ISAR Image Based on Quadrangle-Points Affine Transform	986
<i>Xinfei Jin, Fulin Su</i>	
DTUnet: A Transformer-Based UNet Combined with DenseASPP Module for Pancreas Segmentation.....	992
<i>Cheng Fei, Jianxu Luo</i>	
Transformer-Based Severity Detection of Parkinson's Symptoms from Gait	999
<i>Hao-Jun Sun, Zhen-Guo Zhang</i>	
Network-Based Recommendation Analysis on Online Judge Systems.....	1004
<i>Haoyu Wu, Shaohong Zhang, Han Ding, Weihong Huang</i>	
Classification of P300 Signals from P300 Spelling System Based on ASK-CNN Model	1009
<i>Zhaohua Lu, Ruirui Zhang, Qi Li</i>	
Implementation of Stochastic Computing-Based Image Compression System Using Probabilistic Switching Behavior of RRAM	1016
<i>Shuai Kang, Renhao Pan, Kai Zhao, Junchen Dong, Yudi Zhao</i>	
A New Local Enhancement Algorithm for Small Target Detection Based on Top-Hat Transform	1022
<i>Haoping Zheng, Kai Zhao, Junchen Dong, Yudi Zhao</i>	
A Gated Spatial-Channel Transformer Network for the Prediction of Molecular Properties.....	1028
<i>Jiahao Shen, Qiang Tong, Zhanqi Cui, Zanqiang Dong, Xiulei Liu</i>	
Keypoints Representation of Density-Aware and the Spatial-Channel-Wise Decoder for 3D Object Detection	1034
<i>Qiming Ma, Yu Zhu</i>	
A Compact and High-Precision Gradient Waveform Generator Using an FPGA Device for Magnetic Resonance Imaging	1040
<i>Cangju Xing, Tianqi Wang, Liang Xiao</i>	
An Abnormal Gait Monitoring System for Patients with Parkinson's Disease Based on Wearable Devices	1046
<i>Yan Li, Qingyuan Bai, Xianjun Yang, Xu Zhou, Yining Sun, Zhiming Yao</i>	
Sparse Bayesian Learning Based on Fast Marginal Likelihood Maximization for Joint User Activity Detection and Channel Estimation in Grant-Free NOMA.....	1052
<i>Shuo Chen, Zhigang Cen, Haojie Li, Xuehua Li</i>	
Phase Coded Waveform Set Design for MIMO Radar Using SPS-JADE.....	1058
<i>Tianqu Liu, Hongbo Zhang, Fanyun Chen, Jinping Sun</i>	
Model-Driven Deep Learning Based Channel Estimation for HPO-MIMO	1063
<i>Yujia Liu, Qingyu Li, Fanke Meng, Zixin Xu, Yi Gong</i>	
Prediction of Sintering Density of Full-Ceramic Microencapsulated Fuel Pellets Based on Joint BP Neural Network	1068
<i>Chen Chen, Zongyi Shao, Ruotong Hao, Yu Li, Mingyang Li</i>	

Research on the Content Sharing System for Mobile Edge Caching Networks: A Hierarchical Architecture.....	1072
<i>Jun Yin, Meiqi Zhan, Zhaowei Zhang, Lei Wang, Dengyin Zhang, Xin Xiao</i>	
SMOTE-LASSO-DeepNet Framework for Cancer Subtyping from Gene Expression Data	1078
<i>Yashpal Singh, Seba Susan</i>	
Simulation and Calibration Device of Synchronous Blood Pressure and Reflectance Photoplethysmographic Signals	1084
<i>Ziqi Nan, Xiang Chen, Jin Li</i>	
Dense Labeling of Human Activity Recognition Using a U-Net++ Network Based on Inertial Sensor Data.....	1090
<i>Hanchi Wen, Hanzhi Zhang, Zhanzhi Lei, Liang Xiao</i>	
An Image Encryption Method Based on Random Number Matrix Iterations	1096
<i>Jialiang Luo, Wanbo Yu</i>	
A Novel Motion Compensation Method for High Resolution Terahertz SAR Imaging	1100
<i>Zhaoxin Hao, Jinping Sun, Dandan Gu</i>	
A CPHD Filter Based on EM Star-Convex Random Hypersurface Model for Multiple Extended Targets.....	1106
<i>Weijie Li, Jinping Sun, Fuyuan Feng</i>	
Graph-Based Track Stitching Method for Low Altitude Marine Multi-Target Tracking.....	1112
<i>Xiangqian Li, Jinping Sun, Fuyuan Feng</i>	

Author Index