# 2022 7th International Conference on Signal and Image Processing (ICSIP 2022)

Suzhou, China 20-22 July 2022



IEEE Catalog Number: CFP22G14-POD ISBN: 978-1-6654-9564-6

#### 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:
 CFP22G14-POD

 ISBN (Print-On-Demand):
 978-1-6654-9564-6

 ISBN (Online):
 978-1-6654-9563-9

#### **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@proceed

E-mail: curran@proceedings.com Web: www.proceedings.com



## 2022 7th International Conference on Signal and Image Processing

#### **ICSIP 2022**

#### **Table of Contents**

Prefacexvii Conference Committeesxvii
Session 1: Signal Acquisition and Detection
Kernel-based Sampling of Graph Signals via Graph Sampling Expansion Theorem1
Fen Wang, Taihao Li, Ying Du
Spectrogram-based Frequency Hopping Signal Detection in a Complex Electromagnetic Environment6
Zhe Deng, Jing Lei
Multi-constraint PRF Selection for Airborne Squint Spotlight SAR
Jiahang Jin, Xuecheng Hu, Ge Xu
Frequency Hopping Signal Sorting Based on Spectrum Monitoring Data by Adaptive DBSCAN16
Dejun He, Xinrong Wu, Xiang Zheng, Weijun Zeng, Tianchi Wang
Acquisition Algorithm of Beidou B1C Signal based on Improved Pseudo Correlation Function23
Yingchun Zhang, Lixiang Ma, Lei Zhang, Zhu Xu
A Deception Jamming Detection and Suppression Method for Multichannel SAR29
Yuefei Wang, Qi Dong, Qiu Jin, Xinhua Mao
Speech-based Depression Detection Using Unsupervised Autoencoder
Guangyao Sun, Shenghui Zhao, Bochao Zou, Yubo An
Improved Denoising Method for UWB Vital Signs Detection and Extraction39
Wenhao Xian, Qingjie Qi, Siyun Liu, Tianfang Ma, Huifeng Cheng, Jiamei Chai

#### **Session 2: Signal Measurement and Estimation**

A Gaussian Mixture PHD Filter Based on Energy Accumulation
Liping Guo, Xinglin Shen, Shanzhu Xiao, Huanzhang Lu
Direction of Arrival Estimation Method under Sensor Failure Scenarios via covariance matrix completion
4
Bing Sun, Chen-xi Wu, Wen-li Zhu
Research on Interferometer Direction Finding Technology Based on Digital Beam forming5
WenHui Zhou, YuXin Zhou
An Angle Estimation Algorithm without Prior Knowledge for AESA Cooperative Detection Node5
Pengfei Leng, Shengguo Zhou, Liu Huang, Weixiang Lv
Implementation of Blind Source Separation Based on Improved Variable Step-Size Natural Gradient
Algorithm6
Shaofeng Peng, Dongmei Zhou, Peng Wang, Chao Wang
Non-contact Heart Rate Measurement with Optimization of Variational Modal Decomposition Algorithm
6
Kunpeng Zhu, Chang Pan, Jiaojiao Pang, Jiali Wang, Ke Li, Feng Xu, Yuguo Chen
Automatic Modulation Classification Strategy Based on Novel Feature Processing7
Sileng Aer, Ming Diao, Xiaolin Zhang, Xiaopeng Zhang
A Bit Allocation Method for Object-Based Audio Coding Based on G.719 Codec
Gaoshun Wang, Shenghui Zhao, Jiawei Peng
Improved Strategy of Velocity Measurement for Moving Target
Mingjiang Wang, Qiujun Wang, Xiao Jia, Chen Wang
A super-resolution beamforming method for autonomous underwater vehicle towed nest linear array
based on Sparse Bayesian Learning
Junjie Wang, Zailei Luo, Tongsheng Shen, Mengda Cui, Dexin Zhao, Hao Zhao
Session 3: Acoustics and Speech Recognition
Echo Weighting Design on Complementary Sets for Range Sidelobe Suppression
Jiahua Zhu, Yongping Song, Jundu Ye, Xing Jin

An Improved Tracking Method for Distributed Passive Sonar System100
Pengfei Shao, Qing Li, Bin Zhou
Audio-Visual Event and Sound Source Localization Based on Spatial-Channel Feature Fusion106
Xiaolong Zheng, Ying Wei
Micro-Doppler Parameter Estimation of Ships Based on the Viterbi Algorithm
Fan Li, Shuning Zhang, Lingzhi Zhu, Huichang Zhao, Si Chen
DOA Estimation Algorithm Based on Extension and Shift of Sparse Polarization Sensitive Array 116
ManLing Yang, GuoQiang Guo, YinHe Huang, YuZe Sun
Text-independent Speaker Recognition Based on Xvector
Lianyu Zhou, Mingjiang Wang, Yukun Qian, Huaiwen Luo, Heng Li, Xu Lin
UWB Vital Sign Signal Recognition Method Based on SVM126
Siyun Liu, Qingjie Qi, Wenhao Xian, Jiamei Chai, Bing Wu, Tianfang Ma
Mandarin Speech Recognition based on Chinese Syllable Similarity for Children131
Anchong Xu, Wenxin Hu, Jing Yang, Jun Zheng
Speech Recovery Using Adaptive Noise Canceller with Multiple Optimized Primary Channels137
L. Zhang, Y. Xiao, L. Ma, K. Khorasani, K. Hasegawa
Session 4: Radar Systems and Signal Processing
A Target-region-based SAR ATR Adversarial Deception Method
Tianying Meng, Fan Zhang, Fei Ma
Precise Scatter Estimation of Complex Bridges with Portable MMW SAR147
Jian Wang, Yangsheng Hua, Chongyi Fan, Xiaotao Huang
Prediction of Multi-Function Radar Signal Sequence Using Encoder-Decoder Structure152
Kangan Feng, Hongyu Chen, Yukai Kong, Lidong Zhang, Xianxiang Yua, Wei Yi
Radar Signal Sorting Based on Adaptive SOFM and Coyote Optimization
Zongding Cui, Xiongjun Fu, Ping Lang, Jian Dong, Fei Wu, Haodong Gao
Terrain Recognition Based on the Carrier-Free UWB Radar Using Stacked Denoising Autoencoder 162
Xiaoxiong Li, Si Chen, Yuying Zhu, Shuning Zhang

Hierarchical Sequential Feature Extraction Network for Radar Target Recognition Based on HRRP16	67
Qi Liu, Xinyu Zhang, Yongxiang Liu	
Cognitive Radar Waveform Design Based on Multiobjective Optimization Criteria17	72
Fei Wu, Xiongjun Fu, Ping Lang, Jian Dong, Zongding Cui, Xuanyi Gao	
Correction of Intra-pulse Doppler Effect for SAR with Waveform Encoding	77
Qiu Jin, Yuefei Wang, Xinhua Mao	
DOA Estimation Using an Unfolded Deep Network in the Presence of Array Imperfections18	82
Liuli Wu, ZhangMeng Liu, Jianhua Liao	
Session 5: Signal Analysis and Processing	
Research of EEG Signal Analysis Method Based on Fusion of Riemannian Space and Convolutional	
Neural Network18	88
Gao Nuo, Zhao Kai	
Multi-Task Sparse Signal Recovery with Dirichlet Process Priors Based on Expectation Propagation	
Technique19	95
Yin Fu, Qisong Wu, Yimin D. Zhang, Moeness G. Amin	
The Influence of Meteorological Conditions on TV Satellite Signals in the Plateau	00
Guowei Geng, Xiaomei Cai, Xueguan Liu, Yexin Wang	
The Anti-Interference Algorithm of BPSK Spread Spectrum Signal Based on Generative Adversarial	
Networks20	05
Yu Han, Minghong Zhang, Lei Shen, Lijun Wang	
Research on the Classification Algorithm of Imaginary Speech EEG Signals Based on Twin Neural	
Network2	:11
Qi Heting, Gao Nuo	
An Improved TDOA-based DPD Method via Multiple-frequency Function Fusion2	17
Kehui Zhu, Hang Jiang, Lianjie Yu, Yingying Li, Jianfeng Li	
Design and Implementation of Image Signal Processor Based on CUDA22	22
Bo Zhang, Tu Xu, Yuchun Chang, Zhen Li, Yukun Li	

A Method of Airborne SAR Noise Interference Suppression Based on Blind Signal Separation228
Sixiang Wang, Yue Yuan, Si Chen, Huichang Zhao, and Shuning Zhang
A Fusion Transfer Learning Method of Motor Imagery EEG Signals Based on Riemannian Space233
Gao Nuo, Wang Yunhui
Comparison and Analysis of Coverage Capabilities of 2.1GHz 40M FDD and 3.5GHz 100M TDD in Indoor
Coverage Scenarios of Outdoor Stations
Mingshuo Wei, Yong Zhao, Yuetian Zhou, Chunlei Hu, Weiliang Xie
Session 6: Pattern Recognition
Viewpoint Contrastive and Adversarial Learning for Unsupervised Domain Adaptive Person
re-Identification
Ziheng Chen, Yaling Liang, and Yifei Liu
Jetson NX-oriented Armored Vehicle Fine-grained Recognition
Jiabao Wang, Gaojie Pan, Yinghong Li, Yanju Wu, Yutian He
Few-Shot HRRP Target Recognition Method Based on Gaussian Deep Belief Network and
Model-Agnostic Meta-Learning
Zuyu Ren, Weidong Jiang, Xinyu Zhang
Blockchain-based Federated Learning Framework Applied in Face Recognition265
Haipeng Zheng, Bing Li, Guozhu Liu, Yuqi Li, Yan Zhang, Wenhui Gao, Xiangtao Zhao
Accuracy-efficiency Balanced Sampling Rate Found by Discrete Fourier Transform270
Jiongliang Lin, Yahui Peng, Yufei Yang, Xianhua Dai
Class Constraint-based Discriminative Features Learning Algorithm for Palm Print and Palm Vein Fusion
Recognition
Kunyan Zhang, Huabin Wang, Chengnian Yu, Mengli Du, Liang Tao
CNN Based on Multiscale Window Self-Attention Mechanism for Radar HRRP Target Recognition281
Yujia Diao, Shuowei Liu, Xunzhang Gao, Afei Liu, Zhiwei Zhang

#### **Session 7: Object Detection and Algorithms**

Research on Detection Method of Truck Face Based on Deformable Parts Model286
Jian Cui, Chuangang Kang, Xiaogang Ma, Rong Cao, Xuehui Chen, Xiaoming Qin, Qian Qian,
Chihang Zhao, Teng Ma, Xinliang Wang, Zijun Su, Yuhang Wu
Joint Intra-Frame and Inter-Frame Integration Method for High Speed Weak Target Detection290
Longji Gao, Xiaolong Li, Mingxing Wang, Haixu Chen, Zhi Sun, Guolong Cui
Ship Detection in Inland Rivers Based on Multi-Head Self-Attention
Nanjing Yu, Xiaobiao Fan, Tianmin Deng, Guotao Mao
Target detection based on information fusion of millimeter-wave radar and visual camera300
Guangyang Wan, Tiange Li, Linsheng Liu, Tong Zhu
Image Tamper Detection Based on Two-Stream Attention Faster R-CNN
Shiqian Yan, Yuanyuan Han, Xiaoya Fan, Zhong Wang
P-UNet: Parallel Attention Based UNet for Crack Detection
Xiaohu Zhang, Haifeng Huang
Robust Nonnegative Matrix Factorization Based Background Reconstruction for Hyperspectral Image
Anomaly Detection316
Song Xiaorui, Chen Lingyan, Li Caiping, Dong Tao, Zhu Haojun, Wang Heng
Fast Image Process and Detection of Distorted Blurreadable 2D Barcode322
Yuting Yang, Changfa Lei, Rongjun Chen, Hao Huang, Hong-Zhou Tan
Multi-Channel SAR Moving Target Detection by Integrating STAP and Faster R-CNN327
Xiaoyi Sun, Yaowen Fu, Wenpeng Zhang, Wei Yang, Ruofeng Yu, Fatong Zhang
Research on Head Object Detection Algorithm in Classroom Scene
Zhiwei Zheng, Duo Wang
A Survey of DNS Tunnel Detection
Jiangang Hou, Xin Li, Kun Zhao, Wei Liang, Yanmiao Li, Tongqing Jiang, Zhi Liu
Research on Methods of Truck Plate Detection in Expressway Scene Based on Machine Learning343
Teng Ma, Xinliang Wang, Jialun Wu, Chihang Zhao, Jing Zhang, Xiaoming Qin, Zijun Su, Yuhang
Wu

#### **Session 8: Image and Information Security**

Robust Fourier Watermarking for Print-Cam Process using Convolutional Neural Networks347
Said Boujerfaoui, Hassan Douzi, Rachid Harba, Khadija Gourrame
Halftoning-Based Fragile Watermarking Approach for Digital Image Self-Recovery352
Xiaochen Yuan, Qiyuan Zhang
LogST: Log Semi-supervised Anomaly Detection Based on Sentence-BERT
Mingyang Zhang, Jianfei Chen, Jianyi Liu, Jingchu Wang, Rui Shi, Hua Sheng
Research on Improvement of DES Encryption Algorithm
Xu Zhang, Jiaping Hong
LSB-based Random Embedding Image Steganography Technique Using Modified Collatz Conjecture
Aimee D. Molato, Fredilyn B. Calanda, Ariel M. Sison, Ruji P. Medina
Research on Encryption Technology of CAA Software Based on RSA Algorithm and Hardware Information
Extraction
Wenguo Zhang, Le Zhang, Yang Yang, Pei Lei, Hailong Yu, Lvhan Zhang, Hongzhou Rao
Security Verification of Key Exchange in Ciphertext-Policy Attribute Based Encryption
Baasansuren Bat-Erdene, Yuping Yan, Mohammed B. M. Kamel, Peter Ligeti
Privacy Computing Issues in Collecting and Using Customer Data of Mobile Devices
Da Qi Ren, Hao Liu
NIN-DSC: A Network Traffic Anomaly Detection Method Based on Deep Learning390
Yanmiao Li, Xuan Kong, Jiangang Hou, Xin Li, Kun Zhao, Wei Liang, Tongqing Jiang, Yang Xin, Zhi
Liu
Design and Implementation of Image Copyright Protection System Based on Chinese Cryptographic
Algorithms395
Zengyu Cai, Yajie Si, Jianwei Zhang, Jingchao Wang
Study on Penetration Testing Platform Oriented to CAN Bus Embedded System400
Wansheng Yang, Chi Hu, Siyou Ma
Cross-Example Patch Fusion for Face Anti-Spoofing
Ziyuan Mao, Gangle Sun, Wenjin Wang, Peng Zhang

#### **Session 9: Image Segmentation**

The Category-Sample and Category-Loss Human Body Parsing Algorithm	410
Li Yang, Zuo Huahong, Han Ping	
Research on Evaluation Method of Aerial Image Segmentation Algorithm	415
Heng Wang, Chuangang Zhuang, Jiamei Zhao, Rui Shi, Hai Jiang, Yanrong Yuan, Xinyi Guo and	
Zhichao Xue	
DP2Net: Defense Against Adversarial Examples by Detecting Perturbed Pixels	420
Tong Wang, Haitian Liu, Feng Wang, Junchao Du, Yang Bao	
Image Segmentation for Autonomous Driving Using U-Net Inception	426
Syed Muhammad Fasih Hussain, Syed Muhammad Hamza, Abdul Samad	
Patient Registration of Intelligent Surgical Navigation System—Based on Improved ICP Algorithm	430
Chen Hui, Wu Jie, Liu Jianming, Wang Shiwen, He Qing	
Semantic Segmentation for Mangrove Using Spectral Indices and Self-Attention Mechanism	436
Yu Fan, Qiumei Zeng, Ziqi Mei, Wenxin Hu	
Semi-automatic PFU Counting Method by Double Thresholding and Two-Stage Segmentation	442
Nittaya Khamdee, Sanjira Juntarapornchai, Supatana Auethavekiat	
Weakly-Supervised Crack Segmentation via Scribble Annotations	446
Jianing Quan, Baozhen Ge, Min Wang	
Depth Swin Transformer Unet for Serial Section Biomedical Image segmentaTion	452
Jun Lin, Hongyu Ge, Ying Wan, Ruobing Zhang	
Session 10: Image Denoising and quality Assessment	
Polarimetric CSAR Image Quality Enhancement Using Joint Sub-aperture Processing	458
Yiying Zheng, Xingchao Cui, Guoqing Wu, Siwei Chen	
Exposing Recaptured Images with Constrained Convolutional Neural Network	463
Nan Zhu, Hanchen Xiang, Zhiqin Liu	
An Improved Image Denoising Method Based on Variable-order Fractional-Order Anisotropic Diffusion	468
Xiaohu Shu, Jialing Han, Yapeng Zhan, Zelong Wang	

A Method of Removing Oil Droplets from Bearing Image Based on a Two-stage Neural Network	. 473
Ming Zhao, Kang Kang Song, Xueyu Tian, Xianhua Liao, Jiangjian Xiao	
Comparing the Denoising Effect of NMF with Different Auxiliary Variables on Face Images	. 480
Junfei Gu, Xiao Wu, Yan Lu, Sijia Lou, Kai Sun, Zhao Wang	
Endoscope Image Enhancement Algorithm Based on Pair of Complementary Gamma Functions	. 486
Qianqian Fang, Chao Xu, Bo Feng, Wei Tan	
Enhancing Threshold-based Phenotyping by Normalizing Image Luminosity	. 493
Joel M. Gumiran, Arnel C. Fajardo, Ruji P. Medina	
Session 11: Image Classification	
Hyperspectral Image Few-shot Classification Based on Analogous Tensor Decomposition	. 498
Haojin Tang, Yanshan Li, Li Zhang, Weixin Xie	
A Three-dimensional Attention-connected Convolutional Network for Acute Bilirubin Encephalopathy	
Classification	. 504
LinMao Tian, Zhaohui Wang, and YueFu Zhan	
Research on Double-layer Feature Classification Algorithm for Liquid Dangerous Goods Detection Base	ed on
UWB Centimeter Wave	. 509
Peng Wang, Dongmei Zhou, Chao Wang, Shaofeng Peng	
Transfer Learning on EfficientNet for Maritime Visible Image Classification	. 514
Mostafa Hamdy Salem, Yujian Li, Zhaoying Liu	
Quaternion Graph Wavelet Transform for Color Texture Classification	. 521
Wei Cheng, Yulong Qiao	
Feature Fused Attention Network for Acute Bilirubin Encephalopathy Classification	. 527
Haoyu Zhang, Zhaohui Wang	
An Intelligent Garbage Classification System Using a Lightweight Network MobileNetV2	. 531
Hanxu Ma, Yong Ye, Ji Dong, Yong Bo	
Chinese Word Segmentation based on Word boundary Classificatioin	. 536
Lu Li. Zheng Hu. Baohua Zhao. Suzhong Wei. Aihua Zhou. Hangian Wu	

### Session 12: Advanced Optical Imaging System and Key Technologies

Implementation of Terahertz Video SAR Imaging Based on Multi-Core DSP	541
Tao Wang, Daiyin Zhu, Xingwei Meng	
Sparse Aperture ISAR Imaging Method Based on Meta-CV-ADMMN	546
Ruize Li, Shuanghui Zhang, Yongxiang Liu, Xiang Li	
A Fast Algorithm for SAR Imaging of Ground Moving Target Based on TRP-DPT and NUFFT	552
Shuhua Tan, Long Zhuang, Hui Yu, Yuekun Wang	
Panoramic SAR Imaging System for Unmanned Ground Vehicles	558
Yangsheng Hua, Jian Wang, Xiaotao Huang	
Vector Flow Imaging by Plane Wave Speckle Tracking Based on Different Beamformers	563
Ke Yang, Peter R. Hoskins, George A. Corner, Chunming Xia, Zhihong Huang	
Research on simplified slant range model for BP algorithm applying to missile-borne SAR	567
Chen Xue, Mengyuan Yan, Jingwen Li, Bing Sun	
Deep Learning with Modified loss function to Predict Gestational Age of the Fetal Brain	572
Wen Nie, Wei Xia, Yadong Yan, ZhanHong Qiu	
Wide Range Swath SAR Imaging Method Based On Coherent Frequency Diverse Array Radar	576
Xiaohui Zhao, Lei Yu, Feng He	
Session 13: Computer Vision and Imaging	
Aedes Aegypti Egg Morphological Property and Attribute Determination Based on Computer Vision	581
Cherry R. Gumiran, Arnel C. Fajardo, Ruji P. Medina, Minh. S. Dao, Betchie E. Aguinaldo	
An Analytical Model for Estimating Average Driver Attention Based on the Visual Field	586
Nima Khairdoost, Steven S. Beauchemin, Michael A. Bauer	
A Fast Monocular Visual - Inertial Odometry Using Point and Line Features	591
Weixiang Shen, Yongxing Jia, Junchao Zhu, Xiaojian Qian	
CICRNet: Clinical Information and Category Relation Improve Imbalanced Skin Cancer Diagnosis	596
Yunjian Cao, Hongqiu Wang, Dan Tian, Xin Wang, Shaozhi Wu, Miao Tian	

Adaptive Rescaling for Video Coding Optimization	601
Siqian Qin, Chao Yang, Ping An	
Image Fusion Based on Discrete Cosine Transform with High Compression	. 606
Emadalden Alhatami, Uzair Aslam Bhatti, Mengxing Huang, Si ling Feng	
Determining the Acupoints on the Abdomen Using Synchrotron Radiation PCI-CT, DEI and XRF Metho	ds
	611
Chenglin Liu, Xiaohua Wang, Qiang Zhang	
A Real Beam Sharpening Method Based on STFT for Multiple Moving Targets	. 616
Gui Li	
Session 14: Image Analysis and Methods	
Improved Binarization Algorithm of DM Code Image under Complex Illumination	. 621
Xiao Huichen, Zhang Fan, Zhong Huabao, Shen Yafeng, Zhu Wenzhang	
Specular Reflections Removal of Gastrointestinal Polyps Based on Endoscopic Image	. 627
Kai Qian, Chao Xu, Bo Feng, Ziheng An	
Height Estimation from a Single SAR Image by Depth-Aware Proxyless Neural Architecture Search	. 632
Xue Minglong, Li Jian, Luo Qingli	
Face Template Protection Through Incremental Learning and Error-Correcting Codes	. 637
Junwei Zhou, Li Nie, Delong Shang, Xiangbo Yi	
Research on Three-Dimensional Point Cloud Registration Algorithm	. 645
Yuqing Zhang, Shilong Sun, Jingjing Shang, Minghan Yang	
To Investigate the Ability of CNN in Learning Specific Frequency Band of Motor Imagery EEG	. 650
Chenyun Shi, Lei Liu, Chao Zhang, Xiaopei Wu	
Building Extraction from Remote Sensing Images with Conditional Generative Adversarial Networks	. 655
Hongshun Chen, Wenjing Sun	
Cancelable Face Template Protection based on Deep Neural Network	. 659
Qianya Ma, Bing Li, Guozhu Liu, Yuqi Li, Yazhou Wang, Minzhang Gu, Ke Zheng, Hongqun Cai	
A Pose Estimation Method in Dynamic Scene with Yolov5, Mask R-CNN and ORB-SLAM2	. 665
Junchao Zhu, Yongxing Jia, Weixiang Shen, Xiaojian Qian	

### Session 15: Digital Communication and Network

#### **Technology**

Low Complexity Spatial Covariance Matrix Reconstruction Algorithm in 2D Hybrid Massive MIMO System	ıs
	<del>5</del> 71
Shujun Ye, Liujing Li, Yan Zhou	
Communication Optimization of Body Sensor Network Based on Evolutionary Multi-objective Cooperative	<b>;</b>
Game	76
Lanmei Qian, Haifei Zhang, Fang Wu, Huanxiao Xu	
GB-Spaceborne Bistatic ISAR High-Speed Compensation Method for Small Space Targets 6	81
Liang Li, Mulan Zou, Guanghu Jin	
Dynamic Multi-hop Networking and Cellular Data Offloading in Proximity Radio Access Network 6	86
Nuoya Zhang, Lei Wang, Qi Bi, Kexin Yang, Zuping Wu	
A Threshold Setting Method for SPMA Protocol	91
Zhe Li, Jing Guo	
PAPR Reduction with Compressive Sensing for Joint Radar and Communication System 6	96
Xunnan Zheng, Guo Yang, Yuwen Qian, Wen Wu	
Anti-jamming Method of MIMO-SAR with Dual Modulation of APC and OFDM7	'01
Qifeng Yu, Daiyin Zhu, Yu Wang	
Low Complexity Rate-Adaptive Deep Joint Source Channel Coding for Wireless Image Transmission Usin	ng
Tensor-Train Decomposition	'07
Man Xu, Yuanhui Liang, Chan-Tong Lam, Benjamin Ng, Sio-Kei Im	
A Bidirectional Remote Attestation Method for Electricity 5G Edge Computing Nodes	'13
Zhang Xiaojian, Wang Qi, Lu Xin, Yao Qigui, Xu Min	
Large-Scale Micro-Power Sensors Access Scheme Based on Hybrid Mode in IoT Enabled Smart Grid 7	'19
Di Zhai, Yang Lu, Rui Shi, Yuejie Ji	

### Session 16: Modern Computation Theory and Electronic Technology

Research on Neutron Penetration Characteristics of Structural Materials for Near Space Vehicles	724
Heng Wang, Jiamei Zhao, Jinghui Lan, Yanrong Yuan, Rui Shi, Xinyi Guo, and Jingtian Tang	
Remote Patients Monitoring and Pretreatment in 5G-Based Mobile Hospital Systems	729
Parfait I. Tebe, Jing Chong, Wenjun Zhang, Yongjun Yang, Wenhong Tian, Guangjun Wen	
UEFI Security Threats Introduced by S3 and Mitigation Measure	734
Weihua Jiao, Qingbao Li, Zhifeng Chen, Fei Cao	
Research on Space Multitargets Precise Tracking and Trajectory Prediction Algorithm	741
Jianjuan Xiu, Kai Dong, Ziling Wang	
LPD Data Link in System-of-Systems Simulation	746
Jie Zhang, Wei Cao, Xi Wu, Sicong Wu	
A Method of Data Acquisition Network Delay Measurement for AFDX Avionics System in Flight Test	752
Guojin Peng, Wei Zhang, Manting Liu	
A Matrix Inversion Method Based on LDLT Decomposition and its Application in STAP	756
Wei Li, Zhiyong Lei, Gang Wu, Zhongping Huang	
Unsupervised Title Generation from Unpaired Data with N-Gram Discriminators	763
Tsai-Feng Hsieh, Jung-Sing Jwo, Cheng-Hsiung Lee, Ching-Sheng Lin	
Session 17: Modern Computation Theory and Electronic	<b>C</b>
Technology	
Analyzing the Key Factors of Intelligence Confrontation Based on System Dynamics	767
Wu Henan, Sun Xiaorui, Chen Jian, Li Cheng	
Successive Binary Partition K-means Method for Clustering with Less Cluster Size Bias	772
Akinori Ito	
Prior Matching Operator in Self-Supervised Learning	777
Dongliang Luo. Jian Wang	

Research on Mathematical Model for Vascular Cooling Effect of Tumor Magnetic Induction Conformal	
Hyperthermia78	82
Heng Wang, Jiamei Zhao, Xinyi Guo, Rui Shi, Hai Jiang, Mingjian Pan, Changquan Qiu, and Jingtian	n
Tang	
A Coherent Integration Method for High-Speed Target via Scale Effect Elimination and Across Range Unit	
Correction	87
Shang Wu, Zhi Sun, Xingtao Jiang, Xiaolong Li, Guolong Cui	
Analysis of the Expressive Power of DIFC Model Based on Temporal Logic	92
Zhi Yang, Xiaopeng Li, Hang Xu, Fan Chao, Shuyuan Jin, Zhanhui Yuan	
Online Nonnegative Matrix Factorization with Temporal Affinity	99
Miao Cheng, Feiyan Zhou, Jingli Wu	
Multi-scale Convolutional Network for fMRI-Based Diagnosis of Autism Spectrum Disorder 80	04
Heqian Zhang, Zhaohui Wang	
A Fast Matching Method of Trusted Whitelist based on Bloom Filter	09
Wang Shuai, Hu Aiqun, Cheng Changbo, Song Feifei	
How will the COVID-19 Pandemic Affect the Asian Games? A Joint Analysis of Olympic and Pandemic Big	3
Data8	14
Jianwei Guo, Dandan Cui	
Author Inde	ex