

2024 2nd International Conference on Signal Processing and Intelligent Computing (SPIC 2024)

**Guangzhou, China
20-22 September 2024**

Pages 1-588



**IEEE Catalog Number: CFP24VV6-POD
ISBN: 979-8-3503-6889-5**

**Copyright © 2024 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:	CFP24VV6-POD
ISBN (Print-On-Demand):	979-8-3503-6889-5
ISBN (Online):	979-8-3503-6888-8

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

CURRAN ASSOCIATES INC.
proceedings
.com

Table of Contents

An Improved Unambiguous Tracking Method of B1C Signal Yibo Hou, Yongxin Feng, Fang Liu, Bo Yan	1
Multi-scale Feature Networks for Signal Noise Reduction Yufeng Ma, Fan Zhou, Yang Wang	5
Research on Ship Signal Recognition under Underwater Explosion Interference Based on Wavelet Transform Dongzhi Zhao, Qiang Ma, Danni Gu, Cean Guo, Zhao Shuang	10
Automatic Modulation Recognition of Communication Signal Based on Deconvolution Generation Adversarial Network Zhengyu Wang, Fan Zhou, Xiao Han, Lan Zhang	16
Transit Underdetermined Blind Source Separation Based on ICEEMDAN and FastICA for Switch Machine Locking Signal Qingsheng Feng, Qi Jiang, Wangyang Liu, Shangguan Wei	21
Improved Variable Step Size LMS Algorithm Based on Artanh Function Shihan Liu, Yongxin Feng, Bo Qian	32
Research on Active Disturbance Rejection Control of PMSM Based on Improved BOA Tong Chen, Qiang Jiang, Bopi Jin, Shengxuan Yang	36
Research on LiFi Modulation Technology in Deep Mines Lincong Zhang, Mingyang Zhang, Yongjun Li	41
Time-Frequency Analysis of Underwater Explosion Signal by CEEMDAN-Hilbert Transform Tao Fan, Xiannan Wang, Yan Wu, Shuang Zhao, Cean Guo, Jian Zhang, Hao Cheng	46
Self-exploding Insulator Detection for Transmission Lines Based on Improved YOLOv5s Algorithm Zhichao Zhang, Qiang Jiang, Xiaohui Chu	52
Small Targets Under Drone Perspective Based on Improved YOLOv5s Detection Algorithm Xinyue Feng, Jun Liu, Zhichao Zhang	56
Road Extraction from U2Net High Resolution Remote Sensing Images with Attention Constraints Yongqi Zhang, Lin Gao	60
Distributed Radar Angle Measurement Based on Deep Learning Jiacheng Xiao, Hongyan Zhang, Peng Li, Sen Lin	64
Multimodal Emotion Recognition based on Convolutional Neural Networks and Long Short-Term Memory Networks Yang Liu, Daoshuang Geng, Xiaobang Wu, Yuteng Liu	69
Research on online measurement method of fuse parts diameter based on laser projection method Mingxue Bi, Haowu Zhu, Xuncheng Guo, Qiong Qi	74
Negative Feedback Noise Suppression and Equalization Algorithm Based on DNN Shunchao Fei, Pengfei Lv, Fan Zhou, Yang Wang	78

Improvement of Small Target Detection Algorithm Based on SSD Yuzhi Li, Fang Li, Xiaolin Zhou, Xiangyang Yin, Shuhui Li, Jinchi Dai, Ce Zhang	82
Research on Laser Measurement Solution Method of Fuze Parts Diameter Jin Xia, Chenhao Xue, Qiong Qi, Haowu Zhu, Xuncheng Guo	86
The Study on Laser-induced Breakdown Spectroscopy for Real-time Monitoring the Laser Cleaning of Carbon Fiber Plate Yeqiu Li, Bosen Qin, Jingyi Zhao, Ji Zhao, Chenyang Zhou, Zhizhong Liu, Rina Wu, Qian Li, Yue Zhang, Qin Dai	90
Design and Simulation of Pulse Ranging Fuze Circuit Xing Li, Shuangjie Liu, Yongping Hao, Lanjie Niu	95
Research on Target Detection Technology Based on SSD Fanzhi Ma, Fang Li, Xiangyun Song, Xianglong Yu	100
Occluded Face Recognition Method Based on Multi-Scale Attention Mechanism Dawei Yang, Minghui Fu, Zhiquan Liu	106
Image Processing Based on Inter-frame Color Feature Matching for Visible Light Positioning Baozhu Yu, Xiangyu Liu, Yaoheng Chen, Lei Guo, Jianbo Bao, Jiandong Sun	111
Multi-scale Feature Extraction Channel Equalization Method Based on Res2net Module Yi Wang, Fan Zhou, Heng Su	116
Research on Nonnegative Matrix Decomposition Spectrum Perception Method Based on Convolutional Neural Networks Dongmei Duan, Fan Zhou, Xingye Qian, Shaoqiang Wang	121
Modulation Mode Recognition Method with Multi-feature Fusion under a Complex Noise Floor Haoran Su, Fan Zhou, Pengfei Lv	126
A Neural Network Based Method for Peak-to-Average Power Ratio Reduction in Orthogonal Frequency Division Multiplexing Systems Yijun Ge, Fan Zhou, Jilong Zhang	131
R-YOLOV4: Enhancing Unmanned Aerial Vehicle Target Detection Through Rotational Object Detection and Feature Alignment Xilin Jing, Yutong Zhang, Jiapeng Pu, Hongwei Gao	137
A method of EEG emotion recognition based on residual contraction network Ningxi Su, Fang Liu	141
Vehicle Small Target Detection Algorithm Based on Improved YOLOv7 Dawei Yang, Ming Cui, Junchen Liu, Shuhui Li	145
Research on SSVEP Recognition Method Based on Residual Network Xue Bai, Yueqiu Jiang, Xiaolin Wu	150
Research on Transmission Control Protocol in Satellite Communication Xinglin Wu, Yibing Guo	154

Research on Encrypted Traffic Detection Technology Based on Fusion Attention Mechanism Fengxu Sun, Aihua Li, Xia Sheng	158
Research on Blockchain Anomalous Behavior Detection Technology Xia Sheng, Aihua Li, Fengxu Sun	162
SlowFast Action Recognition Network Based on Improved Residual Structure Guoqing Liu, Qian Wang, Yuan You, Hao Li	166
Design of Network Security Intrusion Detection System Based on NIDSeqFormer Framework Yue Zhou, Zihan Gao, Xiaotong Zhou, Xuanyu Li	170
Research on the Confirmation Mechanism of Satellite Network Aimin Li, Lishi Liu	174
The Application and Performance Optimization of LoRa Wireless Communication Technology in the Internet of Things Zheyong Ji, Yu Ben	178
Adaptive FCM Clustering Routing Algorithm Based on PSO Optimization Yue Liu, Ying Liang	182
Research on the Evaluation Method of Relay Node Trust in Wireless Communication Network Yuting Han, Zhengang Shi, Zhen Tao	186
Research on Network Encrypted Traffic Detection Technology Based on CNN+LSTM Yuqing Cui, Aihua Li	191
Research on Clustering Algorithm for Wireless Sensor Networks Ting Han, Ying Liang	196
A Balanced Load Matching Rate Code Aware Routing Protocol based on network coding Tianyang Jiao, Xiaobo Tan, Jingyu Liu, Shiyu Yu, Ruiqiang Wang	200
An Energy-Saving MAC Protocol for Underwater Acoustic Sensor Networks Based on TDMA Xinhao Zhang, Ying Liang	207
Research and Development of Wireless Sensor Network Detection Software Yue Zhou, Siming Huang, Hong Wang, Xiaotong Zhou	211
The Industrial Internet Security Situation Assessment Method Based on AHP-CRITIC Hybrid Weighting Ling Yang, Shuheng Xu, Lixin Hou, Yaodong Tao	215
Knowledge Graph Construction of Network Security Domain Based on Bi-LSTM-GNN Zhiqi Li, Jie Cheng, Qin Yin, Ang Xia, Lijing Yan, Shuai Li	220
Overview of Research on Named Data Network Architecture Ying Liu, Xiaobo Tan, Jingyu Liu	226
Research on Named Entity Recognition Models for Cybersecurity Jiayu Zhang, Xiaobo Tan, Jingyu Liu, Zongnan Liu	232

IO-Link Safety and Security Chenri Wang, Zhijia Yang, Sen Lin	238
Research on Ship Location Algorithms for Anti Network Attacks Zhihui Dang, Qingquan Liu, Heng Guo	245
Abnormal Traffic Detection Based on Data Augmentation and Hybrid Neural Network Jing Zang, Haoran Li	249
Edge Computing Resource Allocation Method Based on Federated Reinforcement Learning Yingchun Huang, Tao Xie	254
Network Traffic Prediction Based on Firefly Algorithm Optimized Support Vector Machine Yuyuan Cong, Linlin Li, Yibing Guo	259
Spam E-mail Recognition Method Based on Neural Network Model Yingchun Huang, Sen Xing	263
Knowledge Graph Reasoning Model Based on Negative Sampling Optimization Yi Yuan, Yongxin Feng, Yuntao Zhao	269
Research on Intrusion Detection Technology Based on Ensemble Learning and Decision Tree Algorithm Lei Shang, Aihua Li	273
Ultra-Wideband Based Self-Organizing Network Approach for Positioning Systems Binfei Wang, Deyu Zhang, Yue Zhou, Yue Wang, Xiaoqing Wang	278
Research on Malicious Traffic Detection Technology Based on Deep Learning Ze Gao, Aihua Li	283
A Method for Generating Composite Chaotic Sequences Ningning Wang, Qiang Jiang	288
Index Modulation Technique Based on Variable Sub-carrier Number Yu Hou, Fang Liu, Ruiqiang Wang	294
An Optimized Deployment Method for Underwater Wireless Sensor Networks Based on Probability Density for Node Depth Self-Adjustment Wenbo Zhang, Jinchi Dai	299
An Information Completion Method Based on Security Knowledge Graph with Fusing Neighborhood Information Zhengxian Wang, Wenbo Zhang, Jiaxi Dai	303
Research on Indoor Localization Method Based on Smartphone WiFi-Sound Sensor Fusion Zengting Zhang, Zeyu Wang, Jiaxuan Wu	308
Performance Analysis of Multiple Indexed Modulation Based OFDM Shuxin Deng, Yongxin Feng, Fang Liu	314
Energy Saving Multi-hop Routing Protocol Based on LEACH Lincong Zhang, Haoheng Zeng, Yongjun Li	319

Network Security State Evaluation Based on BP Network Improved Fuzzy Evaluation Membership Function Yingchun Huang, Fangshi Wu, Xianxin Wei	324
A Composite Chaotic Sequence Generation Method Tao Sui, Hongda Li, Fang Liu, Haibo Wu	328
Low Energy Scheduling of Hybrid Mine Trucks with Application of Wireless Power Transfer Lincong Zhang, Hui Wang, Yongjun Li	332
Channel Analysis and Performance Enhancement for VLC under Smoke Conditions Xiangyu Liu, Guodong Zhao, Zhenhan Xu, Lie Guo	337
Research on Photovoltaic Maximum Power Point Tracking Technology Based on Combined Algorithms Tianluo Shu, Zhengang Shi	341
Mobile Robot Path Planning Based on Improved Smooth A* Algorithm and Optimized Dynamic Window Approach Dongsheng Wu, Yipeng Li	345
Research on Fuzzy Variable Step Size LMS Adaptive Filtering Algorithm Based on Convex Combination Wenjun Li, Caiyun Wu, Xinze Li, Na Li	349
Research on rolling mill hydraulic fault diagnosis based on GA improved ANN algorithm Jiaqi Xiao, Ning Ye, Bin Xia, Chenglong Xu	353
SAE-WGAN Based Fault Diagnosis Method for Rolling Mills System Yang Liu, Yuxuan Han, Yu Chen, Mingqi Wang	357
Optimal Chaos Sequence Prediction Based on Optimized Radial Basis Function Neural Network Tao Sui, Jiayi Han, Fang Liu, Shuangnan Zhang	361
An Enhanced Autoencoder for Lossy Compression of Auxiliary Physiological Data Jiemiao Gui, Lincong Zhang, Hongbo Zhu	365
A Computation Offloading Method for Delay Optimization in F-RAN Haoheng Zeng, Lincong Zhang, Ying Liang	369
Research on Index-based Octree Neighborhood Particle Search Algorithm Mo Su, Chang Liu, Hong Jiang	373
Research and Practice on Key Technologies for Real Time Data Warehouse Construction Jianguo He, Fang Li, Shuhan Luo	377
Research on Video Frame Insertion Method of Complex Chong Guo, Hongquan Zhang	381
Vehicle Access Monitoring System Based on Radio Frequency Identification Technology Monitoring System Fei Zheng, Shuangjie Liu, Yongping Hao, Lanjie Niu, Guoyang Zhao	386
Autonomous Driving Decision Algorithm based on Hierarchical Dueling Double Deep Q-Network Bo Qian, Bowen Huang	390

A Health Evaluation Model for Radar Seeker Based on Data Mining Technology Haishan Qu, Ming Gong, Yun Feng, Yue Pan, Huajun Wang	394
Optimization of Two-dimensional Path Optimization Algorithm Based on Dijkstra Ant Colony Optimization Algorithm Heng Guo, Qingquan Liu, Zhihui Dang	399
Research on Assembly Sequence Optimization Based on Improved Particle Swarm Optimization Xiangyun Song, Fang Li, Fanzhi Ma, Xianglong Yu	403
RBF Neural Network Based on Particle Swarm Optimization Algorithm Realizes Self-similar Traffic Prediction Qi Jiang, Linlin Li, Lishi Liu	409
Research and Implementation of Solution and Optimization Methods for Nested Algebraic Loops Jing Zang, Shiyi Yi, Haokun Rong	413
Design of Anti-freezing Control System for Express Cabinet Based On Mobile Application Jianqiang Sui, Changming Li, Yuxin Zhang, Yingying Ye	418
LightGBM Bidirectional Feature Selection Algorithm for Time Series Prediction Rui Liu, Jing Zang	422
Anomaly Detection of Time Series Based on SSA-LASSO Hongtao Sun, Jing Zang	427
The Optimization of Prefetching for Pre-record Live Migration of Virtual Machine Zhongyuan Shan, Lei Zhuang, Yan Xia	432
Research Status of Virtual Power Plants Based on Big Data Awei Ma, Lidong Fu, Rongzeming Huang	439
Research on SAR Image Ship Target Detection Algorithm with Improved YOLOv7 Xiyu Li, Wei Yang, Yueqiu Jiang, Shijie Guan, Yongxin Zhang	443
Face Recognition Detection Based on PCA-SVM Chengyu Li, Li Yang, Xiaoyang Xu	449
Research on Short-term Load Forecasting Method Based on ANFIS-BPNN-LSSVM Yan Guan, Xiyang Gao, Dan Guo, Erhao Shang	454
Masked Face Inpainting Using Denoising Diffusion Probabilistic Models Bin Zhao, Fang Li, Fengxiang Li	459
Improved Path Planning Algorithm Based on RRT Qiang Jiang, Ye Man, Xudong Pu	463
Research on Mobile Device Path Planning Based on Improved A* Algorithm Xianxin Wei, Bo Yu, Fangshi Wu	467
A Study on Named Entity Recognition of Chinese Social Text Based on ERNIE and Lexicon Enhancement Xiuli Li, Yi Wang, Yaqiong Qiao, Yu Wang, Jiahui Li	472

Research on Cleaning Method of Wind Power Data Based on Improved Quartile Method Qixue Guan, Keying Geng	478
Design and Implementation of Shenyang Event Venue Reservation System Based on Intelligent Computing Xiaoyang Xu, Li Yang, Chengyu Li	483
Research on Classification of Malicious Code Visualized Target Detection Zipeng He, Yuntao Zhao, Jianjun Yang	488
Research on obstacle avoidance planning of explosion-proof AGV unmanned factory Bo Liu, Hongwei Gao, Yueqiu Jiang, Jiaxuan Wu, Zhen Sun	493
Design of Intelligent Access Control System Based on Raspberry PI Tao Li, Le Wang, Xing Gao, Zhongyi Li, Yingying Ye	498
Device Virtual Connection Optimization and Application Method Based on Nshape Mo Su, Jiaxu Zhao, Yi Wang, Juntao Fan, Chang Liu	502
Research on Multi-Feature Triplet Attention Based Sharpness-Aware Classification Network Shuting Liu, Teng Xu, Yuqian Long, He Zhang, Yuanyuan Zhang, Hangfeng He	508
Holt Double Exponential Filter Algorithm Based on Spatial Limiting Yingzi Wei, Zhihao Wang, Kanfeng Gu	514
Parallel Offloading of Terminal Multitasking in Edge Computing Lincong Zhang, Weinan Zhao, Yongjun Li	519
Design and Realization of Ultra-Wideband-based Indoor Personnel Positioning System Boyu Li, Yue Wang, Xiaoqing Wang	524
Whale Optimization Algorithm Based on Chaotic Mapping and Dynamic Parameters Wei Liu, Wenlv Yan, Tengteng Ren, Tong Li, Chuang Zhang	529
Inception-ResNet Assisted Iterative Decoding Algorithm Based on Alternating Direction Multiplier Method Cunrui Feng, Fan Zhou, Dengyun Cao	534
Improvement of Grasshopper Optimization Algorithm Based on Chaotic Mapping and Levy Flight Wei Liu, Guangyu Han, Tengteng Ren, Chuang Zhang, Tong Li	539
Remote Sensing Small Target Detection Research Based on Improved YOLOv7 Jia Guo, Xiannan Wang, Meihua Song, Shuang Zhao, Cean Guo, Jian Zhang, Hao Cheng	544
Object Action Recognition Algorithm Based on Asymmetric Fast and Slow Channel Feature Extraction Lingchong Fan, Yude Wang, Ya Zhang	549
Research on Fault Diagnosis Model Method of AGC Hydraulic System Based on Transfer Learning Ji Zang	554
Research on Improved Adaptive Spectral Clustering HRM-ISC Algorithm Hongxia Wang, Weijian Tong	559
Adaptive Service Function Chain Orchestration Algorithm Based on Deep Reinforcement Learning Wenbo Zhang, Yangyang Zhang	564

Text Classification Based on Multi-Head Attention Mechanism Donghui Wang, Fan Zhou, Zhenyu Yin	570
A Power Consumption Prediction Method for Data Center Refrigeration System Based on LSTM Yuxing Tian, Lin Gao, Sijun Lu	575
Based on Chaos Neural Network Vector Control for Permanent Magnet Synchronous Motors Jiarong Zhang, Meng Chen, Yisu Wei	580
Design of Lithium Battery Intelligent Management System Lei Jin, Huadong Yang, Nan Xu	584
Research on Unsupervised Campus Audio Anomaly Detection Based on Generative Adversarial Network Yang Xin, Liang Chen, Wenhong Liu	589
A Chinese-Japanese Parallel Corpus for Neural Machine Translation Based on Web-Crawled News Data Zhonghui Gao, Jinyi Zhang, Ye Tian, Tadahiro Matsumoto	594
Research on Fuzzy Robust Control of Multi-channel Closed-Loop Supply Chain with Time-Varying Delay Haifeng Guo, Zhenshan Zhao, Zhenglin Yao	598
Multi-Technology Intelligent Detection of Explosives Shishuai Liu, Li Ma, Lingshuai Ma, Baojia Shu, Xiabing Jiang	603
Research and Design of Vertical Search Engine Technology for National Defense Education Curriculum Resources Xu Wei, Lidong Fu, Rongzeming Huang	607
Remaining Life Prediction of Lithium Battery Based on Data Preprocessing CNN-GRU Model Yang Li, Zhengang Shi	612
State of Charge Estimation of Lithium Battery Model Based on Improved Extended Kalman Filter Algorithm Mengru Feng, Zhengang Shi	616
A Novel Haze Line Prior Haze Image Restoration Algorithm with Refine Transmission Map Hongdong Fan, Yuanlian Huo, Jinshi Zhang, Bo Chen	620
Low-light Image Enhancement Algorithm Based on Transformer Zeyu Wang, Yan Qi	625
Image Super-Resolution Reconstruction Based on Holistic Attention Dual Regression Junchen Liu, Yuan You, Tianyou Zhang, Shiyu Li	629
Research on Complex Street View Detection Algorithm Based on YOLOv8 Haiyang Du, Jun Liu	633
Sensitivity Analysis of Turbulence Model in High Mach Solid Ramjet Simulation Fanxu Meng, Yongpan He, Shuhong Ba, Xinchun Xu, Jie Liu	637
Numerical Simulation of AgI Catalyst Combustion Based on Fluent Yunlong Gao, Shuhong Ba, Maoyu Wang, Haitao Qiao	642

Research on Prediction Model of Gas Concentration in Power Transformer Oil Chenyang Zhou, Lidong Fu, Shuangying Zhang	646
Underwater Image Restoration Based on Marine Snow Removal Techniques Yiping Li, Ben Niu, Tianwei Zhou, Hongwei Gao	651
Line Laser Vision-Guided Weld Seam Tracking System Research Hailong Yin, Qiang Jiang	656
Modeling and Identification of MSMA Self-sensing Actuator Based on Hammerstein Model Jun Lu, Yuhao Li	660
Garbage classification recognition based on improved YOLOv8 model Lijuan Qin, Xiaoyu Tang, Feng Zhang	664
Multi-physics field modeling and simulation analysis of electrothermal microactuators Kai Xiao, Gang Li, Qiong Qi, Xuncheng Guo	668
Analysis and protection strategy based on Modular Multilevel Converter Direct Current faults Sha Hao, Ruihao Wang, Ruming Feng, Chen Gao	673
Research on Pin Defect Detection Algorithm of Power Transmission Line Weiye Peng, Qiang Jiang, Hui Jiang, Junwei Zhang, Xudong Pu	678
Visual SLAM Indoor 3D Map Construction Based on Kinect V1 Camera Jun Liu, Haolun Sheng, Jiabao Zhang	685
Deep Reinforcement Learning Based Path Planning and Collision Avoidance for Smart Ships in Complex Environments Li Zhou, Pan Gao, Xu Zhao	690
Research on Machine Learning-Based Fault Diagnosis and Prediction Techniques for Power Transformers Shuangying Zhang, Lidong Fu, Jiaxing Wang	699
Image Defogging Algorithm for Smoke Conditions Zhiqi Cheng, Shuhua Liu	704
Self-checkout Intelligent Recognition System for Fruit Supermarkets Yue Zhou, Xiya Lv, Hong Wang, Xiaotong Zhou	709
Improved Classification of CT images of Coaropneumonia Based on ResNet50 Zucheng Shi, Zhengang Shi, Qinzi Li	713
Numerical Simulation of Deep-water Explosion Damage of Ring-ribbed Cylinder Poge Kang, Mingkai Yue, Xi Lu, Qiyuan Ao	719
An Improved Lane Detection Algorithm Based on Hybrid Model Xiaoqi Zhang, Shiqing Ren, Fang Zhao	725
Study on the Relationship Between Rock Porosity and Electrode Voltage Based on Digital Image Processin-g Fanzun Kong, Jin Xia, Bingjie Hu, Handong Yu, Jiale Lu	730

An Improved Image Defogging Algorithm Based on Dehazenet Network Jingping Bai, Shiqing Ren, Zhao Fang	736
Application and Practice of PaddleOCR Based Image Recognition Technology in Business License Chenbo Ma, Fang Li, Zichen Wang, Yaozhong Zhang, Fengxiang Li	741
Research on the Detection Method of Safety Helmet by Introducing Attention Mechanism Qiang Jiang, Xudong Pu, Ye Man, Xin Wang, Weiye Peng	746
Research on Fruit Picking Positioning Based on Binocular Vision Lijuan Qin, Xiaohan Wang, Yubin Zhu, Ting Wang	750
Research on Kinect Segmentation Algorithm Based on Pig Point Cloud Lijuan Qin, Qingtang Wang, Xinyu He, Ting Wang	755
An Improved Human Pose Estimation Algorithm Based on High-Resolution Net Model Hao Li, Shiqing Ren, Guoqing Liu, Yuan You	760
Early Image Recognition of Forest Fire Based on Improved YOLOv5 Neck Network Lijuan Qin, Hengrui Zhang, Tao Liu, Ting Wang	765
Use of T1-weighted MRI in the Quantitative Feature Analysis of Breast Lesions Hang Sun, Xueying Wang, Hong Li	769
Multiple Endmember Extraction Using Spatial-Spectral Information Nan Xu, Huadong Yang, Juntong Wang	774
Research on Fault Diagnosis Method for Fan Rolling Bearing Based on Improved ResNet50 Qixue Guan, Yongxin Zhang, Wei Yang, Xiyu Li	779
Numerical Simulation Study of 30CrMnSiA Thin-walled Cylinders with Staggered Spinning Yi Huang, Lei Zhang, Shuang Zhao, Cean Guo, Jian Zhang	784
Optimisation of Camera Calibration Parameters Based on Multiconditional Constraints Yuxin Zhang, Deyu Zhang, Yue Wang, Xiaoqing Wang	789
Improved Radon Transform and Differential Autocorrelation Based Motion Blur Parameter Estimation Method Jiongming Xu, Xiai Chen, Tao Sun, Jiayi Yan, Huannan Qi, Xinglin Hou	793
Dual Generative Adversarial Networks with Contextual-Dropout and Pairwise-Terms for Dual-Phase CT Scans Synthesis in Rectal Cancer Tianyu Shi, Jia Tang, Qingkun Guo, Yan Zhang	798
A Deep Learning Approach for Rectifying Fisheye Image Shuli Gai, Wenhua Cui, Bodong Liang, Ye Tao	803
Prediction Method of Grinding Process Parameters for a Segment Based on Knowledge Graph Mingchen Li, Ying Liang	808
Method of Thickness Measurement of Liquid Crystal Cells Xuefeng Zhang, Jingpeng Li, Jue Wang, Yue Zhang, Qin Dai, Tao Yu, Rina Wu	812

Research on Improved Retinex Traffic Sign Image Enhancement Algorithm Lijuan Qin, Qingtang Wang, Haonan Yan, Ting Wang	816
FPGA-Based Multi-Channel Image Acquisition and Processing System Xiaohui Chu, Qiang Jiang, Zhichao Zhang, Tong Chen, Xin Wang, Yi Yuan	821
Study on the Combination of S-growth Curves Based on Ultra-Wideband Displacement Ranging for Predicting Landslides Xiaoshuang Wang, Deyu Zhang, Yue Zhou, Yue Wang, Xiaoqing Wang	826
Design and Simulation of Tandem Fixed-wing Unmanned Aerial Systems Xu Li, Jinglin Yin, Xin Wang, Yong Yuan	830
Modelling and Simulation of Smoothness in a Man-on-wheels Assisted Marching Device Yashuai Guo, Zhihua Yuan, Pan Gao, Xiao Han, Shiyang Chen	835
Multi-scale complex terrain wind power output prediction based on multi-feature refinement fusion Weisi Deng, Chonghao Li, Haohuai Wang, Cong Lu, Xiyuan Ma, Xudong Hu, Yize Xu	840
Dynamic response characteristic analysis of quadruped unmanned platform Zhichao Huang, Li Yang, Pengfei He, Sheng Li	846
Research on Facial Expression Recognition Algorithm Based on Improved StarGAN Network Dawei Yang, Simiao Jiang, Weinian Wang	852
Research on Vehicle Detection Based on Deep Learning Lizhong Zhu, Xiaonian Li, Linxi Xie	856
Dynamic Simulation of Adsorbed Lane-corner Watch Sniper Launcher Ruiyuan Kou, Zhihua Yuan, Lifeng Guo, Dianyuan Li	861
Research on SLAM Dynamic Target Removal Method Based on Convolutional Neural Network Lijuan Qin, Xiaohan Wang, Zeqi Ma, Ting Wang	866
An Improved Shadow Detection Algorithm Based on Multi-features Ruina Wang, Shiqing Ren, Fang Zhao	871
A Smoking Behavior Detection Algorithm Based on YOLOv5 and Key Points of Human Skeleton Yan Qi, Chaohui Yan	876
Improved Medical Image Segmentation Method and Three-Dimensional Reconstruction Based on 3D-Unet Xiangkun Guo, Huilong Yang, Hong Jiang	881
An Improved Pedestrian Detection Method Based on YOLOv5 Network Weitao Wang, Shiqing Ren, Fang Zhao	886
The Defect Detection Method for Automotive Parts Based on Improved Single Shot MultiBox Detector Using Feature Enhancement Yingzi Wei, Zhongwen Zhao, Kanfeng Gu	891
Multi-layer Graph Convolution Neural Network for Human Behavior Recognition Incorporating Spatial Attention Yingzi Wei, Suyu Yin, Yuheng Zhang, Bin Fu	896

Construction and Analysis of a Low Fuel Consumption Scheduling Model for Mining Trucks in Open-pit Mines Lincong Zhang, Yuhang Liu, Yongjun Li	901
Research on Deep Learning Based Traffic Sign Detection Methods Shiyu Du, Yanhui Lv, Yang Chen	906
Traffic Police Gesture Command Recognition Based on Convolutional Neural Network AlexNet Lijuan Qin, Shiyi Wang	912
Research on Bullwhip Effect under Supplier Interruption Risk Based on Sliding Mode Predictive Control Haifeng Guo, Xiao Zhang, Zhenglin Yao	916
Research and Application of a Graphical User Interface System for Peripheral Blood Cell Detection and Identification Based on Deep Learning Model YOLOv5 Yan Lu, Xingxing Ma, Yun Zhou, Shilei Zhao, Haiyan Zhang, Mingyi Zhang, Hao Chen, Yang Song, Yunfei Gao	921
Research and Application of a Question and Answer System for Bidding Based on Knowledge Graph Lin Zhang, Liang Chen, Wenhong Liu	928
Numerical Analysis of the Factors Influencing Rock Crushing by High Voltage Electrical Pulses Hongda Li, Zhao Jin, Long Che, Bo Zhang	933
Identification Method of Tubing Leakage Based on PCA-SVM in Gas Well Renjun Xie, Laibin Zhang, Zhong Li, Gang Tong, Jianchun Fan, Yinlin Fang	937
Numerical Simulation of Bulletproof Performance Based on LS-DYNA Composite Target Plate Haiying Liu, Xiabing Jiang, Zhiduo Qiang, Haixia Duan, Fei Wang, Ping Xia, Benna Da	943
Dynamic Planning Scheduling Study of Unmanned Mining Trucks in Open-pit Mines Lincong Zhang, Xiaoyu Liang, Yongjun Li	947
Video Human Action Analysis Based on Improved SlowFast Model Using Action Quantization Xilin Yue, Yingzi Wei, Kanfeng Gu	952
Pedestrian Re-recognition Method Based on Pose Estimation and Regional Feature Fusion Fan Yu, Yingzi Wei, Kanfeng Gu	957
Research on the Distribution Pattern of Forward Shockwaves Before Underwater Weapon Launch Qiyuan Ao, Xudong Lu, Xi Lu, Zhiya Jiang, Boge Kang	961
Research on Path Planning of Unmanned Mine Truck in Open-pit Mine Based on Vehicle-road Coordination Lincong Zhang, Tingjin Chen	965
Multi-Agent Reinforcement Learning Based on Cross Task Information Sharing Yu Gao, Lizhong Zhu, Yunting Liu, Jiaming Yang	970
Numerical Simulation of Blast Damage in Masonry Walls Xiangyu Ji, Xi Lu, Hui Liu, Jingxiao Zhang, Yuan Gao, Xiyu Jia	975
A Chinese-Japanese Parallel Corpus for Neural Machine Translation Based on Web-Crawled Data from NetEase Cloud Music	980

Haowei Li, Jinyi Zhang, Ye Tian, Tadahiro Matsumoto	
Numerical Simulation of Anti-tank Rejector Blast Damage Calculations Hui Liu, Xiangyu Ji, Xi Lu, Jingxiao Zhang, Yuan Gao, Xiyu Jia	985
Research on Deep Learning Based Exercise Instruction Methods Jiaye Wang, Yunting Liu, Haifeng Ding	990
Research on Laboratory Unsafe Behavior Recognition Based on Robust Time Feature Learning Advancement Xinran Li, Liang Chen, Wenhong Liu	996
Research on Abnormal Behavior Recognition on Campus Based on Dual-stream 3D FasterNet Jinlong Zheng, Liang Chen, Jingyi Zhang, Wenhong Liu	1001
Laboratory Safety Anomaly Detection Based on GAN Xinqi Tian, Jingyi Zhang, Liang Chen, Wenhong Liu	1006
Single Image Defogging Algorithm Based on Adaptive Exposure Enhancement Jinshi Zhang, Yuanlian Huo, Hongdong Fan, Bo Chen	1011
Lightweight Image Deraining Network Based on Dilated Depthwise Separable Convolution and Enhanced Channel Attention Sen Lin, Guang Zhou, Yonghua Tang	1016
Improved algorithm for liver tumor segmentation in CT images based on U-Net Yan Qi, Hongkun Zhao	1022
Phase Gradient Metasurface RCS Reduction Technique Based on Metal Mesh Microstructure Anning Wang, Hui Zhang, Feng Qi, Yelong Wang, Runsheng Liu	1028
The Propagation Characteristics of Shallow Sea Seismic Waves on the Surface of Buried Bodies Using Staggered Grid Finite Difference Method Jie Li, Ke Lv, Jian Zhang, Shuang Zhao	1034
Research on Maize Recognition at Field Parcel Scale Based on Improved U-Net Network Yue Zhou, Yuzhu Luo, Bing Bai, Dongxia Cheng, Xiuyuan Peng	1040
Experimental Research of Underwater Polarization Imaging Based on Image Quality Assessment Yue Zhang, Chenhao Liu, Zehui Han, Jun Jing	1045
Research on Exam Behavior Recognition Based on Efficientnet Improvement Ning Gan, Jingyi Zhang, Wenhong Liu	1052
Application of Improved Sparrow Neural Network Algorithm Based on Chaotic Mapping for Waste Quantity Prediction Haifeng Guo, Fuqiang Li, Liying Song, Zhenglin Yao	1058
Encouraging Environmentally-Friendly Power and Transportation Network Operations through a Carbon Subsidy System Xiaoyan Zhang	1063
Improved Human Pose Estimation Algorithm Based on HigherHRNet Yan Qi, Junting Pan	1069

Research on the Optimal Action Time Window of Financial Support Policy Based on Deep Learning Nan Wang, Feng Li	1073
High Performance Target Detection Based on Swin Transformer Zhitian Liang, Jun Liu, Jiabao Zhang, Jibin Zhao	1077
Fully Convolutional Transformer for Malignancy Estimation of Pulmonary Nodule Zihao Sha, Hongbo Zhu	1081
Research on Prohibited Item Detection Algorithms in X-ray Images Haixin Huang, Tengfei Ma, Xishuai Liang	1085
Adaptive Control Strategy for PMSM Current Loop Based on Parameter Identification Yisu Wei, Meng Chen, Jiarong Zhang	1091
An Improved Multi-target Detection Algorithm Based on YOLOv5 Network Haiyang Wang, Shiqing Ren, Fang Zhao	1095
3D Reconstruction Algorithm of Indoor Scene Based on Kinect Camera Yan Qi, Yiwen Liu	1100
Face Recognition Implementation Based on Image Processing Techniques Bingcan Yang, Xia Chen	1105
Algorithm for Detecting Human Fall Behavior Based on Pose Estimation Yan Qi, Quanqing Yang	1110
Numerical Simulation of the Effect of Conical-disc Wave-Shaper on Jet Performance Zhengang Liang, Jianqi Jin, Xuncheng Guo, Qiong Qi	1114
Study on the Rapid Parametric Modeling Method of Armored Vehicles Yuhang Shang, Zhengang Liang, Jinyu Niu, Zheping Pan	1119
Parametric Rapid Modeling Approach For Bridges Lu Yuan, Zhengang Liang, Jinyu Niu, Zheping Pan	1125
Simulation Research on Underwater Continuous Explosion Based on AUTODYN Finite Element Software Lihong Xu, Danni Gu, Cean Guo, Shuang Zhao	1131
Damage Efficiency and Evaluation of Explosive-killing Projectiles on Typical Ship Targets Zheping Pan, Jinyu Niu, Zhengang Liang	1136
Research on Forest Fire Image Recognition Based on Improved YOLOv5 Lijuan Qin, Hengrui Zhang, Tao Liu, Ting Wang	1142
Ice Scoop Block Texture Segmentation Method Based on Deeplabv3+ Dejian Li, Jinzhu Qu, Shaoqi Zhang	1147
Industrial CT Truncated Projection Data Reconstruction System Based on Artificial Intelligence Yang Yang, Songjie Wu	1151
A Study on Student Behavior Recognition Based on YOLOv7 Lin Wang, Liang Chen, Wenhong Liu	1158

A study on active power balance control of wind/photovoltaic storage system based on multiple rotating vector superposition approach Guanrong Zhu, Wenbo Luo, Jianan Yan, Guangzong Huang, Ziwei Fan	1164
Research on Cellular Mechanical Properties for Lung Tumor Subtypes Classification and Prediction Shuang Ma, Chengze Liu, Xiaolin Wu	1170
Research on Deep Learning Based Badminton Players' Movement Analysis Methods Qingxin Zhang, Lei Cheng	1175
Optimization and Application of The Search Algorithm for The Efficacy of Airfield Blockade By Penetration Submunitions Qiong Qi, Dongjiang Zhang, Jiashu Lu, Lei Zhang, Yunhui Hou, Xuncheng Guo	1179
Author Index	