

2024 7th International Conference on Pattern Recognition and Artificial Intelligence (PRAI 2024)

**Hangzhou, China
15-17 August 2024**

Pages 1-557



**IEEE Catalog Number: CFP24AX3-POD
ISBN: 979-8-3503-5090-6**

**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:	CFP24AX3-POD
ISBN (Print-On-Demand):	979-8-3503-5090-6
ISBN (Online):	979-8-3503-5089-0

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

2024 the 7th International Conference on Pattern Recognition and Artificial Intelligence (PRAI 2024)

Table of Contents

Preface	xvii
Conference Committees.....	xviii

Intelligent Detection, Tracking, and Recognition

Improved YOLOv8 Detection Algorithm of Contraband in X-ray Security Inspection Image	1
<i>Zhaoyuan Chen, Yan Xu, Fang Li, Guorong Liu, Ping Hu, Xiaodi Zhang</i>	
SPECTER: A Tracker with Super-Resolution Siamese Network Reconstruction and Multi-scale Feature Extraction for Thermal Infrared Pedestrian Tracking	7
<i>Ruoyan Xiong, Shang Zhang, Yue Zhang, Ming Zhang</i>	
CSA-LSTF: An Improved Method for Time Series Data Anomaly Detection	17
<i>Zhengdong Chen, Xiaodong Pang, Binbin Chen</i>	
IVDETR: A Multi-Source Image Pig Detection Method Based on Cross-Domain Feature Fusion	23
<i>Rui Song, Hao Li, Mengzhen Huang, Zihan Huang, Peng Li, Xuwen He</i>	
Improved Informer for Pose Prediction of Badminton Sports.....	31
<i>Yanzheng He, Pengjun Wang, Han Li, Xiaochun Guan</i>	
Research on Cross-Platform Motion Control System Based on gSOAP	37
<i>Hao Tang, Zhezhou Wu, Bo Xu, Uzair Aslam Bhatti, Mingtian Yu, Yong Lu</i>	
Safety Helmet Detection Method in Complex Industrial Scenarios	44
<i>Haosong Gou, Lei Xiang, Xin Tan, Gaoyi Zhang, Xiaonian Chen, Lei Lv</i>	
SAR Target Detection Based on EfficientDet and Convolutional Block Attention Module.....	50
<i>Ning Wang, Meijuan Zhou, Zhong Ma, Xi Liu</i>	
Aerial Target Intention Recognition Based on Deep Belief Network	55
<i>Zhao Wang, Qingyang Song, Si Chen, Xuan Cui, Xiaoshuai Pei, Zhihong Peng, Bao Xi, Hao Yan</i>	

A Hybrid Method of SVG Parameter Calibration Based On Particle Swarm Optimization and Soft Actor-Critic	65
<i>Ao Zhao, Xuanchen Xiang, Ligang Zhao, Hongyue Zhen, Ruisheng Diao, Kaibiao Yan, Guangjun Xu</i>	
Design and Implementation of Anti-peeping Screen Algorithm Based on Soft-NMS YOLOv7	71
<i>Baining Zhang, Hao Chen, Junlong Chen, Huawei Dai</i>	
Object detection model of YOLOv8-CSD for UAV images.....	77
<i>Wenjie Zhou, Changming Zhu, Duoqian Miao</i>	

Image Enhancement

AIGLLM: An Action Instruction Generation Method with Visually Enhanced LLM	84
<i>Yudong Xia, Sirui Zhao, Tong Wu, Huaying Tang, Tong Xu</i>	
Dual-Input Dual-Output Underwater Image Enhancement with Branch Interaction.....	91
<i>Xu Wang, Xun Ji, Shijie Chen, He Yang</i>	
Remote Sensing based advance Image Captioning improved feature Attention.....	97
<i>Ammara Sattar, Muhammad Assam, Tahani Jaser Alahmadi, Uzair Aslam Bhatti, Hao Tang, Muhammad Aamir</i>	
SAFE-MVS: Multi-View Stereo Based on Self-Attention and Feature Enhancement.....	106
<i>Mingwei Cao, Bowen Liu</i>	

Image Segmentation

Improved Forest Fire Smoke Image Segmentation Model Based on GVF Model	113
<i>Qian Wei, Jiang Wengang, Cheng Yao, Wang Jing</i>	
A Lightweight CNN-Transformer Network with Agent Attention Mechanism for 3D Whole Heart Segmentation	119
<i>Jiatong Li, Yifan Wang, Dianrong Du, Hengfei Cui</i>	
UW-DETR: Underwater Image Instance Segmentation with Co-DETR.....	125
<i>Jiaran Jiang, Xin Zuo, Xin Shu, Dan Xu, Ping Qian</i>	
YOLOv9-SAM: A Novel Image Segmentation Method for Industrial Pointer Meter.....	131
<i>Junfeng Li, Jianyu Liu</i>	
TUTNet - A Segmentation Network for Fabric Sewing Thread in the Texture Background	137
<i>Xi Liang, Ye Yu, Fengxin Chen, Zilong Wang, Xin Li, Qiang Lu</i>	
A Polyp Segmentation Method Combining Cross-Layer Attention and Boundary Refinement	143
<i>Wenbin Yi, Dan Xu, Yang Zhou</i>	

Feature Aggregation and Mixing via Cross Attention for Nuclei Instance Segmentation.....	150
<i>Xi Xue, Zao Tan</i>	
MF-SPNet: Dilated Convolutional Pyramid with Attention Mechanism for Semantic Segmentation of Street Scenes.....	156
<i>Peng Yu, Zhiyuan Yang</i>	
3D Abdominal Multi-Organ Segmentation based on Mamba and Channel-Spatial Cross Attention	161
<i>Yazhu Shi, Jing Zhou</i>	
TransSnake: Contour-Based Wild Animal Instance Segmentation Using Contour Transformer.....	169
<i>Tong Liu, Zheng Zhang, Zedong Wu, Bochuan Zheng</i>	

Image Modeling and Reconstruction Methods

Global sensitivity analysis and parameter calibration for a mechanism-based forecasting model of rice sheath blight disease.....	176
<i>Hanxiao Qiu, Jingcheng Zhang, Yangyang Tian, Jiuwen Cao, Huiqin Ma, Ran Huang</i>	
Image Reconstruction Leveraging Time-event Feature Fusion for Event Cameras.....	182
<i>Jian Zhang, Sheng Wu, Wenwei Liu, Hui Feng, Bo Hu</i>	
Aerial3D: Real-word 3D Reconstruction for UAV Images	189
<i>Ziyang Wang, Zhiwei Cao, Mingwei Cao</i>	
Design and Development of VR Virtual Chinese Painting Based on Unity3D.....	196
<i>Chunjie Wang, Yuqi Wu, Hongxia Mao</i>	
CMDM: A Control Motion Diffusion Model for 2D Digital Human Motion Video Generation.....	202
<i>Tong Wu, Sirui Zhao, Siyuan Jin, Tong Xu, Enhong Chen</i>	

Pattern Recognition and Machine Learning

Ensembling Lightweight Models for Intelligent Waste Recognition Based on Degraded Images.....	210
<i>Yangke Li, Xinman Zhang</i>	
Bacterial Inhibition Zone Recognition Method Based on YOLO.....	216
<i>Hao Li, Huirui Han, Uzair Aslam Bhatti, Zicen Wang</i>	
Structural Prior Knowledge Integrated Deep Learning Method for Tiny Object Identification.....	222
<i>Zhipeng Zhang, Xiaohang Yuan, Wenting Ma, Yuan Hao, Jinman Lin, Lei Yang, Meng Guo, Xingang Chai, Xia Zhao</i>	
Unify and Boost Token for Multi-modal Person Re-Identification.....	229
<i>Zhenyu Sun, Li Wang, Lu Liu, Zhiyong Qiu</i>	

Improved Self-Attention for <i>Spodoptera frugiperda</i> Larval Instar Stages Identification	235
Mingyang Wang, Ying Lu, Quanyuan Xu	
Human Activity Recognition with Dual-stream Residual Network based on Wearable Devices	240
Qingquan Zhang, Dinghan Hu, Tiejia Jiang, Feng Gao	
Research on Video Pedestrian Re-ID Method Based on Global Branching and Channel Division.....	246
Fang Li, Ping Hu, Zhaoyuan Chen, Xiaodi Zhang, Guorong Liu, Yan Xu	
SRCT: A Structure Restoration of Complex Table Algorithm	251
Jiamin Tang, Hao Sun, Xuchuan Zhou, Xinpeng Wang	
YUB-200: A dataset for fine-grained bird recognition.....	259
Siyong Liu, Yili Zhao	
Research on Adversarial Sample Attack Defense Methods for Speech Recognition.....	264
Chunlan He, Yujian Bi, Xingwei Liu, Qi Wang, Hong Sun	
A Hypergraph Transformer with Adaptive EdgeConv for Skeleton-based Action Recognition	270
Fengyu Zhou, Jun Liu, Dazhi Zhang, Zengxi Huang	
LEGO Minifigure Recognition Based on Deep Learing.....	276
Peiyao Wang	
SE-ResNet: Recognition of ECG anomalies based on convolutional neural network with fused attention	284
Ju Zhou, Hao Zhao, Chao Zeng, Jixiang Huang	

Remote Sensing Image Detection and Analysis

Improved Remote Sensing Image Target Detection Algorithm Based on YOLOv5.....	289
Xiaodi Zhang, Yan Xu, Guorong Liu, Ping Hu, Zhaoyuan Chen, Fang Li	
An Improved YOLOv8 Algorithm for Rotating Object Detection in Unmanned Aerial Vehicle Remote Sensing Images	295
Hongqing Song, Juntao Pu, Bin Zhang, Yu Chen, Rongzhong Baima, Keyan Zhu, Jiajia Ning	
Multi-Scale Mixed Pixel Network for Remote Sensing Image Super-Resolution	303
He Yang, Xun Ji, Xu Wang, Shijie Chen	
Evaluation of tea tree leaf chlorophyll content retrieval using multi-angle polarized remote sensing.....	309
Yufeng Huang, Xianfeng Zhou, Yunrui Lin, Pengtao Shi, Daoyou Pan, Jingcheng Zhang	
Mamba-Based Residual Network for Remote Sensing Image Super-Resolution.....	316
Gongbo Zhao, Feng Wang	
Wide-area Crop Yield Prediction Based on Multi-Source Remote Sensing Data Fusion and Attention Net ...	322
Pengcheng Huo, Zhong Ma, Zhao He, Kedi Lu, Haochen Zhang, Jinfeng Tang	

Lightweight Remote Sensing Object Detection Model Based on Spiking Neural Networks	327
<i>Xiaoman Zhang, Chunlei Xie, Zhihong Chen, Dan Liu</i>	

Intelligent Image Analysis and Processing Methods

AutoFill: An automatic approach to filling panoramic images	335
<i>Su Wang, Mingwei Cao</i>	
Extended-attention Applied in Selected Stages.....	343
<i>Zeyu Zhang, Yuki Todo</i>	
AutoCrop: An Automatic Approach to Cropping Panoramic Images	350
<i>Mingwei Cao, Haiyan Jiang, Haifeng Zhao</i>	
Design of a Distributed Fusion Network Based on Knowledge Distillation	360
<i>Qiaoyun Wang, Siling Feng, Mengxing Huang</i>	
SED-Net: Speedy Encoding-Decoding Network for Artistic Style Transfer.....	366
<i>Haoqun Teng</i>	
MSFF: A Novel Multi-modal Semantic Feature Fusion for Social Media Fake News Detection	372
<i>Bin Li, Shijie Zhou, Zhengqiang Zhang</i>	
Neural Numerical Estimation of Liquid Volume in Transparent Containers via a Single RGB-D Image	379
<i>Yexiong Lin, Shizhe Zhou</i>	
Blended Latent Diffusion under Attention Control for Real-World Video Editing.....	385
<i>Deyin Liu, Lin Yuanbo Wu, Xianghua Xie</i>	
Precise Image Editing with Multimodal Agents	392
<i>Bin Fu, Chi Zhang, Fukun Yin, Pei Cheng, Zebiao Huang</i>	
A Novel Spatio-temporal Information Knowledge Distillation Strategy for Weak-supervised Video Anomaly Detection.....	398
<i>Bo Cheng, Wenjia Zhu, Xu Sun, You Zhang, Ye Yu, Qiang Lu</i>	
A Novel Framework for Reservoir Permeability Prediction using GPR with Grey Relational Grades and Uncertainty Quantification	404
<i>Ahmad Lawal, Yingjie Yang, Nathanael L. Baisa, Hongmei He</i>	

Intelligent Image Detection and Algorithms

Non-destructive Detection of Moldy Camellia Oleifera Seeds Based on Deep Learning and Hyperspectral Imaging.....	412
<i>Zhenyu Han, Yongli Zhang, Guangfei Zhu, Xuan Liu, Hao Tang, Tailin Han</i>	

SAR Aircraft Target Detection Based on Improved YOLOv8.....	418
<i>Jinghan Zheng, Jie Guo, Ming Hao</i>	
A Spatial Small Object Detection Algorithm Based on the Improved YOLOv8.....	425
<i>Meijuan Zhou, Ning Wang, Zhongxi Wang, Xi Liu, Zhong Ma</i>	
An Improved Merge-YOLOv5 Algorithm Applied to Helmet Wear Detection.....	430
<i>Baining Zhang, Yongxin Yuan</i>	
Improved YOLOv8 for Small Aircraft Detection in SAR Images	437
<i>Jinghan Zheng, Jie Guo, Ming Hao</i>	
Overview of Underwater Object Detection Based on Image Processing Techniques	443
<i>Muhammad Aamir, Jinxiong Gao, Yonghui Zhang, Hao Tang, Uzair Aslam Bhatti</i>	
Rapider-YOLOv7: Lightweight Infrared Object Detection Network.....	450
<i>Pucheng Xu, Yuecheng Yu, Rundong Zou, Jinlong Shi, Yongzheng Li</i>	
Feature Level Fusion of radar and camera based on Transformer in 3D object detection.....	456
<i>Junye Yu, Rui Guo, Yue Zhang, Zengping Chen</i>	
DVGN: A Differential Value Guidance Network for Underwater Objects Detection	461
<i>Shijie Chen, Xun Ji, He Yang, Xu Wang</i>	
SSMask: Salient super-pixel mask data augmentation for object detection	467
<i>Hao Zhao, Jixiang Huang, Hao Deng, Xue Deng</i>	
Research on Pothole Road Detection and Recognition based on PyTorch and Improved YOLOv5.....	472
<i>Guihua Zhang, Junchao Dai, Ruyi Zeng, Yin Liu, Bin Lei, Jiali Huang</i>	
Locking Latch Loosening Detection of Train Based on YOLO Framework	480
<i>Biliu Wang, Kaiying Han, Jiayang Qin, Wenteng Xu, Zhong Huang, Duo Zhao</i>	
A study of a Sobel edge detection and SVM based ALPR system on an ARM single-board microcomputer	485
<i>Kang Dong, Qiao Pengcheng, Kong Xiaohan</i>	

Deep Learning for Intelligent Systems and Pattern Recognition

AVF-Lip: High-Fidelity Talking Face Generation via Audio-Visual Fusion.....	491
<i>Mengduo Wu, Sirui Zhao, Tong Wu, Yifan Xu, Tong Xu, Enhong Chen</i>	
A regression analysis and prediction method for assembly error of aviation product components	500
<i>Zhang Yan, Zhou Yuan, Ma Pengfei</i>	

Enhancing Embedded System Performance with an Adaptive Quantization Scheme for Binary Neural Networks	508
<i>Lu Wei, Chaojie Yang, Shugang Zhang, Zhong Ma, Qin Yao, Wei Zheng</i>	
Development an Object Tracking Method Based on Deep Learning	514
<i>Ahmad Ismail, Sergey Vishnyakov</i>	
Neural network-based prediction intervals for uncertainty quantification in VI curves.....	518
<i>Zheng Zhao, Peng Lin</i>	
Deep Neural Network Accelerator: Exploring the Potential of 3D Chiplet Integration	523
<i>Shu Wang, Tianxing Wang, Siying Bi, Feng Jiao, Xinrong Long, Zhong Ma</i>	
Recommendations for Healthcare: An Interpretable Approach Using Deep Learning	529
<i>Uzair Aslam Bhatti, Yang Ke Yu, O.Zh. Mamyrbayev, A.A. Aitkazina, Tang Hao, N.O. Zhumazhan</i>	
Design a Hybrid Neural Network Tracking System Using Multiple Cameras	536
<i>Ahmad Ismail, Sergey Vishnyakov, Mohammad Zedan</i>	
Enhancing Barangay Safety: Leveraging Convolutional Neural Networks for Comprehensive Detection of Brawling Incidents in Philippine Barangays	541
<i>John Clement S. Escobañez, Mark James G. Cayabyab, Julie Anne Angeles-Crystal</i>	
Fiber Optic Sensor Demodulation System Using Peak Wavelength Tracking Method and Neural Network Algorithm	546
<i>Qinkai Liu, Ning Niu, Sen Zhang, Qingxia Zhuo, Mengxing Huang</i>	
Leaf Chlorophyll Content Retrieval from Hyperspectral Measurement Using Convolutional Neural Network and Continuous Wavelet Transform Techniques.....	552
<i>Yunrui Lin, Xianfeng Zhou, Yufeng Huang, Pengtao Shi, Daoyou Pan, Jingcheng Zhang</i>	
APT Attack Organization Identification Profiling Based on Big Language Models	558
<i>Binhui Tang, Yishan Lu, Haokang Peng, Zhiran Chen, Yang Ming</i>	
Quantization Technology for Neural Network Models with Complex Branching Structures	570
<i>Yu Yang, Lu Wei, Zhong Ma, ChaoJie Yang, YueJiao Wang</i>	

Neural Networks and Computational Models in Image Processing

Research on Ship Fault Identification Based on Optimized Convolutional Neural Network Algorithm	577
<i>Zhen Zhang, Yinglong Zhao, Feng Chen</i>	
Graph neural network with adaptive node-edge augmentation strategies for imbalanced node classification	584
<i>Jinyao Yan, Jiaqi Lou, Hailiang Ye, Feilong Cao</i>	

Fast Inter Partitioning of CU Based on Neural Network For Versatile Video Coding	590
<i>Xudong Zhang, Jing Chen, Debo Zhang, Jiaxin Zeng, Yuting Zuo, Quanxu Zhao, Wanjian Feng</i>	
Dual Convolutional Neural Network with Explainability Attention Mechanism for Diabetic Retinopathy Classification	596
<i>Xiang Feng, Zixuan Chen, Keliang Wu, Jincheng Peng, Happy Nkanta Monday, Grace Ugochi Nneji</i>	
Predicting Accuracy for Quantized Neural Networks: An Attention-Based Approach with Single-Image	602
<i>Lu Wei, Chaojie Yang, Shugang Zhang, Zhong Ma, Qin Yao, Wei Zheng</i>	
Digital Circuit Correlation Optimization of Neural Networks for Apnea Detection during Transplantation	607
<i>Xu Lin, Heng Li, Yukun Qian, Yun Lu, Mingjiang Wang</i>	

Artificial Intelligence and Intelligent Computing in Digital Image Processing

Alleviating Action Hallucination for LLM-based Embodied Agents via Inner and Outer Alignment	613
<i>Kanxue Li, Qi Zheng, Yibing Zhan, Chong Zhang, Tianle Zhang, Xu Lin, Chongchong Qi, Lusong Li, Dapeng Tao</i>	
PC-CSP: An Efficient Partial Convolution in Cross Stage Partial Network for Small Targets Detection	622
<i>Junmin Xue, Yunbo Rao, Jiangang Wu, Mei Huang</i>	
Research on Match Competition Prediction Algorithm Based on LightGBM	629
<i>Haiyan Zhang, Xu Liu, Wanyu Chen, Guihua Gan</i>	
Real-World Super-Resolution via Multi-degradation based Texture Feature Reconstruction.....	635
<i>Ning Qiao, Hongyang Zhou, Hailong Kou, Xiaobin Zhu</i>	
LightGBM Prediction Algorithm Based on Bayesian Optimization and Its Application.....	643
<i>Yijia Zhang, Zhengqi Meng, Qiwei Gao, Wanyu Chen, Haiyan Zhang</i>	
Self-Supervised Image Denoising with Blind-Spot Network and Residual Learning.....	650
<i>Lingjun Liu, Jiabao Zhong, Xier Tan, Haoye Jiang, Haoyi Tang, Zhonghua Xie</i>	
A Survey of Temporal Knowledge Graph Reasoning.....	657
<i>Yutong Bu, Yiwei Lu, Yizhi Wang, Bo Huang, Yu Tao, Yongqi Shi</i>	
Enhanced Multivariate Time Series Regression Prediction Using Temporal Convolution Networks	662
<i>Pingsi Zhong</i>	

Defect Detection and Engineering Applications

EM-YOLO: An Improved Steel Surface Defect Detection Model Based on YOLOv8n.....	667
<i>Siling Feng, Di Zhang, Mengxing Huang, Guanjun Wang</i>	

A Feature Extraction and Detection Method for Multi-scale Defects on Mineral Surface	673
<i>Yinhui Wu, Chun Yin, Liuchi Pan, Zhongbao Yan, Junyang Liu</i>	
Leather Defect Detection Algorithm Based on an Improved YOLOv5s.....	679
<i>Xuwen He, Hao Li, Yifan Liu, Rui Song, Yuchen Zhao, Xiao Ou</i>	
An improved YOLOv7 based concrete defect detection method.....	685
<i>Zhiyuan Wang, Zhili Chen, Adamu Abubakar Abba</i>	
Improved yolov5 photovoltaic panel defect detection algorithm	690
<i>Ping Hu, Zhaoyuan Chen, Fang Li, Xiaodi Zhang, Guorong Liu, Yan Xu</i>	
Label Defect Detection Based on Improved CenterNet.....	695
<i>Yani Fan, Hui Zhang, Hongwei Yue</i>	
A Comprehensive Data Augmentation Method for Modern Cigarette Packaging Defect Detection.....	700
<i>Yanjin Ma, Yunbo Rao, Junmin Xue, Qixue He</i>	

Image Modeling and Processing Techniques Based on Machine Learning

A Dual Attention Fusion Network for SAR-Optical Land Use Classification Based on Semantic Balance	707
<i>Ke Yu, Feng Wang</i>	
Multi-view Ensemble Clustering based on BLS-Autoencoder.....	713
<i>Yukun Yang, Yifan Shi</i>	
Study on Large-Scale Crop Disease Epidemic Forecasting Based on a Fusion Model between SEIR and LSTM Networks	720
<i>Xuehe Zhou, Jingcheng Zhang, Yangyang Tian, Jiuwen Cao, Zichao Jin, Lingbo Yang</i>	
Integrating Multicore SVM with Enhanced Residual Networks for AI Content Recognition.....	726
<i>HaiQing Zhang</i>	
Aircraft Control Level Evaluation: Environmental Factor Analysis and Quantitative Evaluation System Construction.....	730
<i>Zihan Zhao</i>	
Robust Stereo Matching Using Noise Feature Extraction Network with Dynamic Convolution	735
<i>Kang Yuan, Zhenxing Xu, Youssef Akoudad, Wei Gao</i>	
PE3DNet: A “Pull-Up” Action Quality Assessment Network Based on Fusion of RGB Image Data and Key Point Optical Flow.....	742
<i>Rui Yang, Xiaona Xiu, Jian Wang, Ruyao Wang</i>	

Semi-supervised Multi-view Ensemble Clustering with Subspaces Extraction and Constraints Propagation	748
--	-----

Chenyue Yang, Yifan Shi, Rongxin Guo

CFGNet: Coarse-to-Fine Grained Network for Image Classification of Confusing Fly Species	754
--	-----

Lin Niu, Bo Wang, Baomin Niu, Jin Zhang, Danning Liang, Jingpeng Wu, Rong Zhou, Jianqiang Deng

Artificial Intelligence in Medical Image Analysis

Improving YOLOv8 for Microbial Object Detection in Microscope Images	763
--	-----

Huayang Gao, Xin Zuo, Shixin Huang, Dengbiao Jiang, Jinlong Shi

Algorithm Improvement for Bacterial Detection in Microfluidic Environments	769
--	-----

Yang Liao, Jixiang Zu, Chengpan Lei, Hanyang Bao, Siqi Dong, Ying Xu

A New Strategy for Retinal Vessel Segmentation based on Semi-dilation supervised Learning and Boundary Reconstruction	775
---	-----

Changpeng Wang, Mingxu Sun, Yuliang Ma

CA-UNet: A Brain MRI Segmentation Model Based on U-Net with Attention Mechanism	781
---	-----

Song Xinya, Duan Xingguang, Wang Xujia, Fang Fengxinyun, Tian Jiexi, Li Changsheng

Hybrid Attention Mechanisms and Bio-inspired Optimization for Enhanced Breast Cancer Diagnosis from Ultrasound Images	786
---	-----

Farheen Mirza, Hongyu Zhao

Gynecological disease diagnosis system based on YOLOv8	793
--	-----

Baining Zhang, JiaHui Ji, JunWei Xue, JiaMing Xu, MianHui Wu, DeZhi Zeng, JinLiang Huang, Weirui Wu

Classification of Mammogram Analysis Using BL-CNN	798
---	-----

Hichem Razgallah, Jiyun Li

Exoskeleton human-computer interaction based on deep learning and sEMG imaging	805
--	-----

Wanni Xu, Minghua Guan, You-Lei Fu, Weifang Xie

Pretrained Model with CNN for Lung Cancer Identification and Classification	811
---	-----

Shaista Kanwal, Sajid Ali, Tahani Jaser Alahmadi, Muhammad Assam, Ghulam Jillani Ansari, Uzair Aslam Bhatti

A novel classification model based on DWT and CNN-LSTM motor EEG imagination signals	817
--	-----

Yuyao Yang, Zuowen Chen, Weisu Li, Yahong Ma

Artificial Intelligence and Intelligent Healthcare

Survey on Ethical Challenges of Implementing AI in Healthcare	824
---	-----

Nikita Lalwani, Muhammad Abdul Basit Ur Rahim, Aravind Anand, Sumair Pasha Shaik, Gauri Shashank

Moghe, Debarati Datta

Application of the MUTAN model to the VQA task 835

Kejun Guo

Research on Automatic Detection of Epileptic Seizures Based on the CNN-Transformer Model 839

Junlong Chen, Binglin Wen, Luo Yi, Yuanling Zhou, Haiyan Chen, Zhen Zhang

Data augmentation in medical materials science: A review 844

Wenhao Lin, Yifeng Lin, Yuer Yang

FF-UNET: An Enhanced Framework for Improved Segmentation of Brain Tumors in MRI Images 852

Jinru Liu, Uzair Aslam Bhatti, Mengxing Huang, Hao Tang, Yuanyuan Wu, Siling Feng, Yu Zhang

Multi-Task Breast Ultrasound Image Classification and Segmentation Using Swin Transformer and VMamba Models 858

Julio Rodriguez, Kuan Huang, Meng Xu

Multi-channel color space analysis for nuclei segmentation in histopathology images 864

Siyu Yan, Qi Zhang, Xizhe Zhang, Jingzhang Sun, Jianhang Zhou

Hybrid GRU-Down-U-Net Deep Learning Model for Breast Invasive Ductal Carcinoma Classification 871

Mutian Liu, Xiaomei Wang, Xintong Zeng, Yuxi Lu

Aberrant Brain Structure-function Decoupling in Generalized Epilepsy Revealed by Graph Signal Processing 877

Jie Xia, Zhiqing Zhang, Wei Liao

The Application of Artificial Intelligence in Intelligent Information Systems

A New Algorithm for Path Planning in Dynamic Environments based on Modified Artificial Potential Field Model and Modified Ant-Q Algorithm 883

Jinghao Zhang

Real-time target detection method for UAV embedded platform 889

Qin Yao, Yang Liu, Deyun Zhou, Lu Wei

Short-Term Power Load Forecasting Model Based on EEMD-SE-ERCNN 893

Mingui Yang, Yong Liu, Yu Mu, Zhibo Li, Hongqin Zhang, Wenhao Chen, Fei Rong

LSTDNet: A Long-range Spatio-Temporal Decoupling Network for traffic prediction 899

Pengpeng Tan, Wei Shi, Zhihui Shi, Youquan Wang

Cross-Modal Contrastive Learning for Robust Reasoning in VQA 905

Qi Zheng

A Memory Management Method for DNN Inference for Aerospace Embedded Systems.....	914
--	-----

Shen Li, Feiyue Wang, Shugang Zhang, Tianxing Wang, Zhong Ma, Feng Liang

Research on Fault Diagnosis of Rotating Machinery Based on Multi-Scale Causal Dilation Convolution	922
--	-----

Junxiao Ren, Hao Zhao, Xuefeng Gao, Junlin Li, Quanyu Zhong

Electronic System Integration Technology for Intelligent Missile Weapons	927
--	-----

Xu Wang, Dashan Shi, Kerong Cai

Inertial Projectile Trajectory Estimation Method Based on Conv-LSTM and Particle Filtering Fusion	933
---	-----

Hanyu Wang, Qiang Shen, Zilong Deng, Xiaokang Wang

Weapon Detection using Mask R-CNN and ResNeXt.....	939
--	-----

Sebotso Kanakang, Chunling Du, Oluwasogo Olaifa

Robot visual inertial SLAM algorithm based on point-line features	944
---	-----

Jintao Xu, Yu Fang, Weiwei Gao

Emerging Networks and Signal Processing

The Construction and Experimental Technologies of Anonymous Network Analysis and Control Platform	950
---	-----

Yue Zhao, Bin Yang, Bo Tian, Yarang Yang

Simulation Study on Optimization of ZigBee Routing Protocol Based on Improved Cluster Tree Algorithm	956
--	-----

Yan Xu, Lihua Cheng, Qingping Ye, Junhao Yi, Xuanqi Li

An EEG Signal Analysis Method Based on Common Spatial Pattern and Support Vector Machine Algorithm	962
--	-----

Yuxin Wang, Bao Liu, Yuqi Tang

A Physiological Signal Denoising Method Using Adaptive Kalman Filter.....	968
---	-----

Yingwen Yao, Yanbing Jiang

Advanced Modulation Recognition with CResNet for Mining Complex Information.....	973
--	-----

Zijin He, Xiaodong Zeng

Modified Affinity Propagation for Key Node Identification based on Intra-class Distances	977
--	-----

Yu Zhang

MFAN: Multi-Scale Feature Attention Network for Speech Emotion Recognition	983
--	-----

Weifeng Ma, Wei Song, Xin Li

CSM2Net: Exploring Effective Fusion of Complex Spectral Masking and Complex Spectral Mapping for Speech Enhancement.....	990
--	-----

Yun Lu, Tasleem Kausar, Xiaoye Wang

Improved Conditional Posterior Cramér-Rao Lower Bound for Geometry-Dependent Bistatic Radar Measurement Uncertainty	996
---	-----

Huiling Cheng, Yifang Shi

Anti-occlusion Object Tracking Algorithm Based on Kalman Filter.....	1002
--	------

Huiling Chen, Gui Fu, Huichao Shao, Fukun Zheng, Xin Li, Yanhua Shao, Hongyu Chu

VisSpecDic: Visual Analysis of Spectrum Situation Data based on Density Incremental Clustering.....	1007
---	------

Cong Xunchao, Huang Jinyue, Zhu Zhengguo, Ren Zilong, Rao Yunbo, Pu Jiansu

Intelligent Algorithms and Machine Learning

Distilled Deep Prediction for Community QA	1013
--	------

Albert Yao, Xiaoyi Guo

A Time Series Analysis-Based Forest Disturbance Time Backtracking Method in Northeastern China, the Changbai Mountain.....	1019
--	------

Yuxiao Yan, Changsheng Zhang, Lei Fang, Bin Zhang, Xingjun Dong, Ying Guo

Comparative Study of Traffic Carbon Emission Prediction Models Based on X-KELM.....	1025
---	------

Gu Yueyang, Li Cheng

ISTAD: Scaled Transformer with Interactive Learning for Multivariate Time Series Anomaly Detection	1030
--	------

Jingjing Kang, Guogen Wan, Jiazhong Lu, Yuanyuan Huang

Deep Learning with Gated Recurrent Unit Recurrent Neural Networks and Multi-objective Optimisation for Portfolio Management.....	1037
--	------

Yang Liu, Lijun Yu

MAML-TSC: Model-Agnostic Meta-Learning for Time Series Classification.....	1043
--	------

Jiahao Wang, Zutong Sun, Hang Yan, Hao Chen

Improving Prediction Accuracy of Bridge Element Deterioration for Decision Support.....	1050
---	------

Haiyan Sally Xie, Sai Ram Gandla, Owen Shi

Digital Control System and Intelligent Measurement and Control Technology Based on Data Model

Functional Movement Screen (FMS) Computerized Automated Scoring Technology Research.....	1056
--	------

Linxian Fu, Xia Zheng, Yanzheng He, Yiteng Jin

End-to-End Network for Early Crop Planting Area Prediction.....	1063
---	------

Kedi Lu, Zhong Ma, Zhao He, Pengcheng Huo, Haochen Zhang

A Domain Knowledge Graph Construction Method Based on Joint Extraction of GlobalPointer	1069
---	------

Zhenghua Zeng, Yonghui Zhang, Hao Tang, Uzair Aslam Bhatti, Jinxiong Gao, Yong Lu

A Method of Rolling Bearing Fault Diagnosis Using Transfer Learning	1076
<i>Zengxi Liao, Xiang Wu, Shiyu Lei, Dehong Qiu</i>	
Analysis of Standardized Impedance Models for Electrochemical AC Measurement Based on a Global Heuristic Algorithm	1083
<i>Hanyang Bao, Boyu Guo, Chengpan Lei, Yang Liao, Siqi Dong, Ying Xu</i>	
A redundant data elimination method based on change detection.....	1089
<i>Li Wang, Zhong Ma, Shugang Zhang</i>	
Dynamic Low-Rank Adaptation Based Pruning Algorithm for Large language Models.....	1094
<i>Linfeng Li, Lei Guo</i>	
A Multi-Objective Intelligent Control Method for Active Distribution Power Network Using Proximal Policy Optimization Agents.....	1100
<i>Ke Sun, Wei Tang, Anqi Wang, Ruisheng Diao, Tiantong Qiao, Tu Lan</i>	
A Fast Measurement Method of Temperature Field on High Temperature Surface Based on Color CCD	1107
<i>Xutong Tan, Chun Yin, Junyang Liu, Yan Gao, Zhongbao Yan</i>	
Dynamic Regulation Domain Adaptation Network for Cross Domain Bearing Fault Diagnosis	1113
<i>Jiajun Zhong, Peng Lin</i>	
Study on Multi-channel Color CCD-based Temperature Measurement for High-temperature Objects.....	1118
<i>Junyang Liu, Chun Yin, Yan Gao, Zhongbao Yan, Xutong Tan</i>	

Author Index