2024 3rd International Conference on Artificial Intelligence, Internet of Things and Cloud Computing Technology (AIoTC) | 979-8-3315-3028-0/24/$31.00 ©2024 IEEE | DOI: 10.1109/AIOTC63215.2024.10748332

Table of Contents

Research on an AI Agent-Based Smart Home Active Personalized Service System 1
Jiayi Xia, Yunlei Zhang, Dongyan Li

StraightLine: An End-to-End Resource-Aware Scheduler for Machine Learning Application Requests 5
Cheng-Wei Ching, Boyuan Guan, Hailu Xu, Liting Hu

Self-Representation and Generative Adversarial Learning-based Bluetooth Radio Map Reconstruction for Indoor Localization 11
Yingying Guo, Xu Kang, Lei Ma

HazardClassTransformer: Transformer-Based Model for Reactive Chemical Hazard Classification in Industrial Processes 16
Maohua Gan, Yang He, Renyu Liu, Qianhui Gao

Design of automatic game system based on Artificial Intelligence for three pieces of chess 23
Ziwen Li, Dun Lin, Kaitao Deng, Weijia Li, Jiale Yang, Lei Zhang

ADMM Based Semi-Structured Pattern Pruning Framework for Transformer 27
Tianchen Wang

Research on Time Delay Effect in Demand Response of Central Air Conditioning 35
Yan Wang, Tieshi Li, Jiaqi Sun, Bo Zhu, Xin Gu

Breaking Local Optima: A Multi-Stage Strategy for Milk-Run Logistics Optimization 39
Beiqi Wang, Tianqi Li, Ze Qian

Research on Improving the Efficiency of Live Operation Safety Management through Knowledge Graph and Action Recognition Technology 44
Haiyang Liu, Xuguang Zhang, Minghai Tang, Peiyu Zhao, Xin Tong

Advanced Open-Set Fault Diagnosis in Power Grids via Text-Image Matching 48
Yang Jiang, Xing Deng, Hang Shi, Yanwei Miao, Jinan Chen, Zexi Zhang

Thinking about anti-drone strategies 53
Li'an Wang, Jing Luo, Zhongxing Li, Mingjian Wang, Ruidong Li, Weichang Xu, Fujun He, Beibang Xu

Analysis of the impact of artificial intelligence on electricity consumption 57
Yuelong Jia

Research on intelligent decision-making method for fire risk in commercial complexes based on case-based reasoning 61
Peng Liu

Low-carbon multi-objective optimization of workshop based on electrical manufacturing IoT technology 65
Chaoyong Zhu, Yibing Zhang, Meichen Wu, Yashuai Yang

Real-time 3D human pose estimation through augmented reality technology and TransPose model 74
Chen Cheng, Huahu Xu, Jian Kang

Design and simulation of biped robot based on ball screw 80
Yankai Cheng, Xiaoqing Zhu

Ammunition coordination fault diagnosis method based on wavelet packet and CPO-LSSVM 85
Xudong Zhu, Qiang Yin
Lightweight Diffusion Model for Camouflaged Object Detection 91
Wei Cai, Weijie Gao, Xin Wang, Xingyu Di
Driver Behavior and Action Prediction in Human-Computer Interaction 97
Zhoukaiwen Lai
Cloud-Based Flight Test Data Management and Application Platform 102
Haifeng Wang
Network Attack Strategy Generation Based on Multi-agent Reinforcement Learning 108
Renhua Liu, Chaohao Liao, Ruidong Chen, Shihe Zhang
Optimization Algorithm for Multi AP MESH Wireless Network Coverage in Underground Pipe Gallery Environment 116
Roufei Li, Yingming Cai, Anqi Tian, Fu Hong, Zhihao Zhang
SIHG-NC: A Semantic Interaction-based Heterogeneous Graph Neural Network for Node Classification 120
Wenbin Ma, Haomin Li, Yimemg Chen, Wenke Zang
Lightweight Semantic Segmentation Network for Remote Sensing Urban Scenes Based on Selective Kernel 124
Youwen Fan
Multi-Branch Information Network for Advanced Image Captioning 130
Caixia Song
A Spatial Focal Modulation Network for Image Restoration 134
Lei Yang, Jingyi Liu, Ze Shi, Caijuan Shi, Liqi Li, Fanyu Meng
Hardware Security Vulnerability Mining Techniques for Intelligent Connected Vehicles 138
Dongqing Sun, Mingming Yu, Zhen Guo, Tianling Liu
BOA-LSSVM Network-Based Malware Detection with Combination Weighting 144
Ruijie Hu
Industrial Internet Security Situation Assessment Method Based on Self-attention Mechanism 148
Yitong Liu, Yan Sun, Caiyun Liu, Ying Weng
Improving the CodeGeeX Model Based on the Relative Convolutional Multi-Head Attention Method 152
Deguo Yang, Ao Xu
Hybrid AI-Driven Techniques for Enhancing Zero-Day Exploit Detection in Intrusion Detection System (IDS) 156
Ahmed Hasham Ibn E Tariq, Moazan Basoud Ibn E Tariq, Songfeng Lu
A Secure Distributed Estimation Based on Affinity 161
Xiaoping Ren, Hao Yi, Honghua Yi, Yilin He
Analysis and Design of Financial Wealth Management Platform Based on Cloud Edge Collaboration 165
Yanxia Liao, Yuedi Gou, Zibo Liu, Jie Zhang
Research on Global Path Planning Technology for Field Maneuver of Armored Platforms 169
Yan Cui, Kaifeng Zheng, Pu Li, Haijiao Wei

User Pairing in Full-Duplex Enabled Vehicular Networks Based on Deep Reinforcement Learning 176
Jie Ren, Xietian Guan, Xiaosen Shi, Wenrui Yang, Liang Han
Distortion Analyzer Based on the Internet of Things 180
Hongyu Ruan, Keyu Zhou, Qisheng Zhang, Jingwen Zhang
Research on open source software vulnerability mining based on improved Fuzz-SOA 185
Jing Zhou, Junhan Guo, Qiaojuan Jia, Ming Liu, Tianqi Peng, Xiaoyu Jin, Dawei Ma, Weitao Lu, Shi Peng, Zhanxiang Ma
Multi-level identification of open source software user attack behavior based on Weisfeiler-Lehman and GraphSAGE 190
Xiaoyun Tian, Jing Zhou, Junhan Guo, Qiaojuan Jia, Xin He, Ming Liu, Tianqi Peng, Xiaoyu Jin, Dawei Ma, Weitao Lu, Shi Peng, Zhanxiang Ma
A study on Interpolation of Missing Values in Multivariate Sand and Dust data considering Time-series Features 195
Yongsheng Wang, Shiyi Tan, Gang Wang, Guangwen Liu, Chunlei Liu
Efficient anomaly detection algorithm for operational data based on fuzzy cognitive map 201
Xin Zhao, Changda Huang
Short term nonlinear load forecasting method for distributed photovoltaic grid connection based on GSA algorithm 205
Pengfei Xu, Yan Li, Mengyuan Tang, Xing Tian, Baohao Gao
Enhancing Path Planning in UAVs: An Improved Goal-Biased RRT Algorithm for Complex 3D Environments 209
Rui Ming, Jinrong Chen
EGLK-Means: An improved K-means clustering algorithm with enhanced global and local information 215
Yuzhi Zhang
Sequential Recommendation Based on Attention Mechanism and Fourier Transform 219
Rongrong Zhu, Wenqiang Zhu
Super-Resolution Reconstruction Algorithm for Underwater Images Based on Deep Residual Learning Networks 224
Haonan Chen, Li Zou, Chengjin Hong, Zekun Wu
E-commerce data anomaly detection method based on variational autoencoder 231
Jia Li, Shaojiang Liu, Jiajun Zou
An Optimized ADR Algorithm for LoRa Network Based on EWMA 235
Jiewei He
CACFD: Channel Attention for Computational Fluid Dynamics Stimulation 240
Hao Sun, Jiaxin Shi
Remaining life prediction of water purification filter based on time series 244
Jia Chen, Hexiao Zhang, Chang Li, Han Xiao
A Long Sequence Urban Block Wind Speed Prediction and Wind-Induced Pedestrian Risk Analysis Method 248
Ranpeng Wang, Yi Liu
Research on Distributed Computing Power Scheduling Based on Ant Path Optimization 252
Shijie Gao, Wende Wang, Cong Hu, Chao Chen, Xiaoqiang Liu, Zihan Jin, Guang'ao Li

MAF-UNet: Building extraction Algorithm Based on Improved U-Net Network 258
Xiao Yang
Research on Distributed Storage Algorithm for Multi-source Survey Data in Power Grid Engineering 264
Jiyong Zhang, Gao Yu, Donghui Liu, Xiaohu Sun, Jiangqian Huang, Bangzheng He
Foundation Pit Support Deformation Prediction Based on Deep Echo State Network Optimized by Empirical Balance Particle Swarm Optimization 268
Xin Jiang, Lu Zhao, Wen Liu, Xue Wang, Feng Tao, Boyang Cui, Zhenlong Wang
A Multi-Task Optimization-based Heterogeneous Expensive Multi-Objective Evolutionary Algorithm 275
Chunlin He, Yong Zhang
QH-Bird: A Fine-Grained Bird Visual Dataset and Hierarchical Consistency Denoising Method 280
Wenjing Song, Shengling Geng, Dan Zhang
Application Research of Euler Deconvolution-Based Magnetic Object Localization Algorithm in Luggage Positioning Systems 287
Zhuxin Wang, Li Li
Research on Knowledge Graph Algorithm Based on Hierarchical Semantic Perception 295
Zhengzheng Wei, James A. Esquivel
Semantic segmentation and localization of double-split diversion line based on improved yolov8 299
Fan Mo, Lijun Xiao, Jianghui Lin
A Edge-guided Satellite Image Semantic Segmentation Method for Real Estate Appraisal 303
Yinuo Cui, Yilin He, Fangyuan Zhu
Variable-Domain Fuzzy based Dual-Loop Control for Stewart Platform Dynamic Target Tracking 309
Shengyang Min, Jie Luo, Yudong Zhou
An efficient key agreement scheme without trusted third parties for vehicle platoon fusion 314
Zihan Wang
Enhancing Single Image De-raining with a Sparse Spatial Transformer 318
Shao Zhang, Huahu Xu, Dikai Fang, Jingkun Xu, Jun Shen
An interference method based on periodic sawtooth wave phase modulation 323
Yuan Li
Multimodal Multi-Graph Joint Recommendation 329
Jiaqi Niu, Daoerji Fan, Shuo Zhang, Eruna Zhao
RGembed: A Knowledge Graph Embedding Model Integrating Dual-Prediction and Graph Attention Networks 334
Xinsi Ma, Xiaojun Zhou, Xiaohui Rong
LSD3K: A Benchmark for Smoke Removal from Laparoscopic Surgery Images 338
Wenhui Chang, Yufeng Li, Zebang Zhu, Yuchen Yang
Research on image recognition and intelligent management of accounting bills based on information technology 343
Shu Chen

Research and Application of Pig Iris Recognition Technology 347
Shipu Xu, Guoqing Liu, Yong Liu, Yunsheng Wang
Based on cross-modal interaction and multi-level fusion sentiment analysis 354
Deguo Yang, Dongyue Li
Gaze Object Detection Based on 3D Body Posture 358
Xiao Feng, Yi Chen, Junwen Xiao
Facial Expression Recognition in Museum Settings Using an Enhanced Residual Networks 362
Rui Xia, Chun Liu
Improvement of SMOTE Based on Graph Neighborhood Structure and Latent Feature Learning and Its Application 367
Xiaoxia Wang, Leixiao Li
Contextual Relation Guided Image-Text Matching 371
Yafei Bu, Tao Yao, Chunzhe Lv, Gang Wang, Ying Li
Underwater Passive Target Recognition Based on Self-Supervised Contrastive Learning 375
Lingpeng Lin, Yuechao Chen, Fangyong Wang
Optimized YOLOv10 for X-ray Image Dangerous Object Detection 381
Shuo Zhang, Jiaqi Niu, Yuepeng Chen, Jin Chen
RGB-D image modeling method based on Transformer: RDT 386
Qianqian Teng, Xianbo He
Target Dectection for UAV Infrared Images based on Improved YOLOv8 390
Tao Zhang, Xiaogang Yang, Ruitao Lu, Xueli Xie, Chenhao Zhu, Yang Xiao
Lightweight Semantic Segmentation for RoboCup SPL: A U-Net Model with MobileNetV2 and Attention Mechanisms 395
Jinwei Xia, Ruiyang Su
A Helmet Wear Detection and Tracking Method Based on YOLOv8 And Bytetrack 400
Lianbin Zhao, Xiang Gao, Zhili Ma, Shaodong Sun, Haitao Zhu
A Survey of LLM-based Agents: Theories, Technologies, Applications and Suggestions 407
Xiaofei Dong, Xueqiang Zhang, Weixin Bu, Dan Zhang, Feng Cao
Author Index 414