

2024 8th International Symposium on Computer Science and Intelligent Control (ISCSIC 2024)

**Zhengzhou, China
6-8 September 2024**



**IEEE Catalog Number: CFP24M45-POD
ISBN: 979-8-3503-8029-3**

**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:	CFP24M45-POD
ISBN (Print-On-Demand):	979-8-3503-8029-3
ISBN (Online):	979-8-3503-8028-6

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

2024 8th International Symposium on Computer Science and Intelligent Control (ISCSIC) **ISCSIC 2024**

Table of Contents

Message from General Chairs	xvi
Organizing Committee	xvii
Program Committee	xviii
Steering Committee	xix
Reviewers List	xx
Sponsors	xxiii

Intelligent Control Systems, #/A

Robust Control of a Rotorcraft-Slung-Load System with Experimental Validation	1
<i>Ziyang Yang (Shanghai Jiao Tong University, China), Yanhu Wang (Shanghai Jiao Tong University, China), Yao Yu (Shanghai Jiao Tong University, China), Ruonan Liu (Shanghai Jiao Tong University, China), Weidong Zhang (Shanghai Jiao Tong University, China), and Wei Xie (Shanghai Jiao Tong University, China)</i>	
Fault-Tolerant Control of Variable Load Drone Based on HOFA System Approach	7
<i>Runze Wang (Harbin Institute of Technology, China), Ruizhi Tong (Harbin Institute of Technology, China), Linjie Li (Harbin Institute of Technology, China), and Yi Zeng (Harbin Institute of Technology, China)</i>	
Novel Controller Design and Stability Analysis for Nonlinear Multi-Agent System with Time-Varying Dynamics	12
<i>Tianci Xu (Soochow University, China), Baotong Jiang (Soochow University, China), and Jun Huang (Soochow University, China)</i>	
Research on Modeling and Control of Levitating Sphere System Based on Virtual Prototype	17
<i>Chenglin Zhuang (Shanghai Maritime University, China), Haiyan Qiang (Shanghai Maritime University, China), Cheng Xiao (Shanghai Maritime University, China), Yougang Sun (Tongji University, China), and Lusi Zhang (Shanghai Maritime University, China)</i>	
Saturated Periodic Sliding Mode Control for Active Suspension Systems	21
<i>Menghua Zhang (University of Jinan, China), Lincong Han (University of Jinan, China), and Jiayi Pei (University of Jinan, China)</i>	
Nonlinear Control Strategy with Guaranteed Transient Performance for Double Pendulum Cranes	26
<i>Zhenyue Fan (Hebei University of Technology, China) and He Chen (Hebei University of Technology, China)</i>	

Integral Sliding-Mode Disturbance Observer-Based Control for T-S Fuzzy Systems	30
<i>Lei Zhang (Hebei University of Technology, China) and Likui Wang (Hebei University of Technology, China)</i>	
Finite-Time Consensus of Discrete-Time Multi-Agent Systems	35
<i>Zhihong Liang (Hebei University of Technology, China) and Sanbo Ding (Hebei University of Technology, China)</i>	
Active Disturbance Rejection Control Method for Offshore Cranes Based on Differential Fatness	40
<i>Zhaoqi Li (Hebei University of Technology, China) and He Chen (Hebei University of Technology, China)</i>	
Adaptive Output Feedback Control for 2D TORA System Based on Velocity Observer	45
<i>Xinran Yang (Hebei University of Technology, China) and He Chen (Hebei University of Technology, China)</i>	
Research of Transfer Iterative Learning Control	49
<i>Zuojun Liu (Hebei University of Technology, China), Kaixuan Wu (Hebei University of Technology, China), and Jie Zhang (Newcastle University, UK)</i>	
Seeking Bipartite Formation of Networked Agent Systems Subject to Random Packet Loss	53
<i>Wenbing Yang (The Army Equipment Department, China), Xianqing Meng (Shanxi Datong University, China), Boxian Lin (University of Electronic Science and Technology of China, China), Mengji Shi (University of Electronic Science and Technology of China, China), and Lei Shi (Henan University, China)</i>	
Fault Detection and Leader-Following Consensus of Positive Multi-Agent Systems with Hybrid Gain Performances	59
<i>Shouting Hong (Hainan University, China), Linyan Han (Hainan University, China), Shinong Wang (Hainan University, China), and Junfeng Zhang (Hainan University, China)</i>	
Automatic Image Acquisition and Matching in Control System of Near-Field Beam Shaping	64
<i>Suicheng Li (CAEP, China), Wenwen Shen (CAEP, China), Zizhou He (CAEP, China), Chen Zhou (CAEP, China), Li Li (CAEP, China), and Jun Luo (CAEP, China)</i>	
Construction of Intelligent Low-Carbon Comprehensive Control System Based on End-to-End Cloud Synergy	68
<i>Huan Liang (Hebei University of Technology, P. R. China), Jinhui Li (Hebei University of Technology, P. R. China), Shengjun Piao (Hebei University of Technology, P. R. China), Peng Chen (Hebei University of Technology, P. R. China), and Xu Chen (Hebei University of Technology, P. R. China)</i>	

Data Analytics, #/B

Anomaly Detection of Server Performance Data Based on Graph Convolutional Networks and TCN	73
<i>Tingfang Tan (Hainan University, China), Hao Tang (Hainan University, China), and Yonghui Zhang (Hainan University, China)</i>	

Research on Loan Default Risk Prediction Methods Based on Graph Neural Networks	79
<i>Heguang Chen (Henan University of Economics and Law, China), Shuhong Li (Henan University of Economics and Law, China), Huidang Zhang (Henan University of Economics and Law, China), Heng Zhang (Henan University of Economics and Law, China), and Yifan Liang (Henan University of Economics and Law, China)</i>	
Design of a College Student Employment Guidance Platform Based on Spark Framework and FP Growth Algorithm	84
<i>Mei Huang (Chengdu Polytechnic, China) and Rui Hu (Southwest Jiaotong University, China)</i>	
A Diagnosis Model for Rehabilitation Training Prescription for Spinal Cord Injury Patients Based on Multi-Label Classification	89
<i>Botao Qie (Hebei University of Technology, China), Xin Guo (Hebei University of Technology, China), and Wei Chen (Nation Research Center for Rehabilitation Technical Aids, China)</i>	
A Prediction Method of Phase Equilibrium Mass Fraction Based on Pre-Training RoBERTa Model.	93
<i>Guangyu Yang (Hebei University of Technology, China) and Wei Zhang (Hebei University of Technology, China)</i>	
Construction Vehicle Detection Model Based on Bidirectional-Path Cosine Self-Attention Feature Pyramid Network	98
<i>Liangshuai Liu (Electric Power Research Institute of State Grid Hebei Electric Power Co., Ltd, China), Yanpeng Ji (Electric Power Research Institute of State Grid Hebei Electric Power Co., Ltd, China), Haiyan Feng (Electric Power Research Institute of State Grid Hebei Electric Power Co., Ltd, China), Shaokang Zhao (State Grid Hebei Electric Power Co., Ltd, China), Yong Ni (Hebei University of Technology, China), and Yilin Gong (Hebei University of Technology, China)</i>	
Development of An Automated Data Analysis Program in Python on the Influence of Extracts on Changes in Lipofuscin Content in the C. Elegans Organism	103
<i>Irina S. Milentyeva (Kemerovo State University, Russia), Elena V. Nikolaeva (Kemerovo State University, Russia), Pavel S. Rudnev (Kemerovo State University, Russia), Alexander A. Vladimirov (Kemerovo State University, Russia), Andrey N. Porokhnov (Kemerovo State University, Russia), and Alexander Yu. Prosekov (Kemerovo State University, Russia)</i>	
Gamification for Health and Online Communities: Enhancing Medication Adherence and Emotional Well-Being in Pediatric Thalassemia	109
<i>Wendu Sha (Wenzhou-Kean University, China), Xuhan Wang (Wenzhou-Kean University, China), Yibo Zhu (Wenzhou-Kean University, China), Fucheng Xie (Wenzhou-Kean University, China), Baha Ihnaini (Wenzhou-Kean University, China), and Hemn Barzan Abdalla (Wenzhou-Kean University, China)</i>	
Efficient Numerical Methods for Convection-Reaction-Diffusion Equations with Distributed Delay	117
<i>Huiru Wang (Henan University of Economics and Law, China)</i>	
Analysis of Max-Plus Algebraic Model for Intelligent Manufacturing Systems Based on Heap Method	121
<i>Taiwen Rao (Hebei University of Technology, China; Central South University, China) and Zuojun Liu (Hebei University of Technology, China)</i>	

Computer Vision and Image Processing, #/C

- Oblique Vision Perspective Conversion-Based Scene Matching Navigation Scheme for UAVs .. 125
Shiji Tong (University of Electronic Science and Technology of China, China), Kaiyu Qin (University of Electronic Science and Technology of China, China), Haoyang Yuan (University of Electronic Science and Technology of China, China), Mengji Shi (University of Electronic Science and Technology of China, China), Boxian Lin (University of Electronic Science and Technology of China, China), Yu Wu (Chongqing University, China), and Qiang Liu (University of Electronic Science and Technology of China, China)
- Optic Disk and Cup Segmentation using Dual Branch and Transformer 131
Weiya Shi (Henan University of Technology, China), Can Feng (Henan University of Technology, China), Tiantian Wang (Henan University of Technology, China), and Yitao Liang (Henan University of Technology, China)
- Super-Resolution with RCAN for Improved Malaria Cell Classification: A Performance Evaluation 137
Chang Yu (Chengdu University of Technology, China), Xiyue Lin (Chengdu University of Technology, China), Goodness T. Mgbejime (Univ. of Electronic Sci. & Tech. of China, China), Yaoqing Wang (Chengdu University of Technology, China), Happy Nkanta Monday (Chengdu University of Technology, China), and Grace Ugochi Nneji (Chengdu University of Technology, China)
- From Segmentation to Generation: the Emerging Trends in Skin Lesion Detection 142
Junwei Yu (Henan University of Technology, China) and Yuhe Xia (Henan University of Technology, China)
- V10Drone: Improved YOLOv10 with KAN for Small Object Detection in Aerial Images 148
Zhiqing Li (Beijing University of Chemical Technology, China), Haomin Chen (Beijing University of Chemical Technology, China), Zhen Wang (Beijing University of Chemical Technology, China), Yanbo Wang (Beijing University of Chemical Technology, China), Jiaqi Li (Beijing University of Chemical Technology, China), and Haijiang Zhu (Beijing University of Chemical Technology, China)
- A Knowledge Distillation-Enhanced YOLOv5s-LW-att for Accurate Detection of Coal Gangue 155
Yingjie Wang (Beijing University of Chemical Technology, China), Haiyan Wu (Beijing University of Chemical Technology, China), and Ruichen Liu (Beijing University of Chemical Technology, China)
- Improved CNN Networks for Fault Diagnosis Based on Imaging Multi-Dimensional Signals ... 160
Haiyan Wu (Beijing University of Chemical Technology, China), Ruichen Liu (Beijing University of Chemical Technology, China), and Yi Meng (Beijing University of Chemical Technology, China)
- TFFT-Net: A Hybrid CNN-Transformer Approach for Time-Frequency Feature Fusion in Bearing Fault Diagnosis 165
Menda Wu (Beijing University of Chemical Technology, China), Dazi Li (Beijing University of Chemical Technology, China), Dong Gao (Beijing University of Chemical Technology, China), and Jinglin Zhou (Beijing University of Chemical Technology, China)

Nondestructive Classification of Black Tea Grades Based on Hyperspectral Imaging and Machine Learning	170
<i>Yuhan Liu (Beijing Technology and Business University, China), Cuiling Liu (Beijing Technology and Business University, China), Caijin Ling (Guangdong Academy of Agricultural Sciences, China), Qiaoyi Zhou (Guangdong Academy of Agricultural Sciences, China), Xiaorong Sun (Beijing Technology and Business University, China), and Di Wu (Beijing Technology and Business University, China)</i>	
Detection of Smoking and Phone Usage Behavior in Gas Station Scenes Based on YOLOv8	175
<i>Xiaoming Zhang (Beijing Institute of Petrochemical Technology, China), Quanlong Li (Beijing Institute of Petrochemical Technology, China), and Yufan Guan (Beijing Institute of Petrochemical Technology, China)</i>	
Knowledge Extraction Model Based on Semi-Automatic Annotation	180
<i>Tianhao Ji (Beijing University of Chemical Technology, China), Dazi Li (Beijing University of Chemical Technology, China), Xin Ma (Beijing University of Chemical Technology, China), and Dong Gao (Beijing University of Chemical Technology, China)</i>	
Research on Image Recognition Algorithm Based on Improved DBSCAN and Its Application in Augmented Reality Inspection System	185
<i>Haomin Li (State Grid Binzhou power supply company, China), Yi Liu (State Grid Binzhou power supply company, China), Mingliang Mu (State Grid Binzhou power supply company, China), and Guangqian Guo (State Grid Binzhou power supply company, China)</i>	
End-to-End Remote Sensing Image Matching Based on Deep Feature Learning	190
<i>Peng Chen (Hebei University of Technology, China), Beiyuan Bao (Hebei University of Technology, China), and Fuchao Shi (Hebei University of Technology, China)</i>	
Small Object Detection in Remote Sensing Based on Feature Fusion and Channel Attention	195
<i>Yueran Ge (Hebei University of Technology, China), Wenqiang Ji (Hebei University of Technology, China), Shasha Yin (Hebei University of Technology, China), and Wei Zhang (Hebei University of Technology, China)</i>	
Object Detection of Construction Machinery Around Power Transmission Line Based on Spatial Feature Fusion Network and the Technology of Distance Measurement	201
<i>Ze Chen (Electric Power Research Institute of State Grid Hebei Electric Power Co., Ltd, China), Liangshuai Liu (Electric Power Research Institute of State Grid Hebei Electric Power Co., Ltd, China), Zhenfei Huo (Electric Power Research Institute of State Grid Hebei Electric Power Co., Ltd, China), Shaokang Zhao (State Grid Hebei Electric Power Co., Ltd, China), Zhen Cao (Hebei University of Technology, China), and Haiyong Chen (Hebei University of Technology, China)</i>	
Cross-Modality Comprehensive Feature Aggregation Network for Road Scene Segmentation ..	206
<i>Yale Yang (Henan University of Technology, China), Zihao Zhang (Henan University of Technology, China), Huifang Hou (Henan University of Technology, China), Wenwen Zhang (Henan University of Technology, China), and Chunsheng Zhuang (Henan Academy of Sciences, China)</i>	
Pain Recognition Algorithm Based on Improved Xception and Attention Mechanism	212
<i>Yanli Geng (Hebei University of Technology, China), Shijie Guo (Hebei University of Technology, China), Shijie Lu (Hebei University of Technology, China), and Bowen Gu (Hebei University of Technology, China)</i>	

Pressure Ulcer Stage Evaluation Algorithm Based on Multi-Scale Attention Residual Network	217
<i>Yanli Geng (Hebei University of Technology, China), Hao Sun (Hebei University of Technology, China), Zelei Li (Hebei University of Technology, China), and Shucaai Yang (Tianjin Magic Technology Co., Ltd., China)</i>	
Three-Dimensional Measurement and Defect Detection Method of Refractory Bricks Based on Principal Component Analysis	221
<i>Peng Chen (Hebei University of Technology, China), Yong Bai (Hebei University of Technology, China), and Bin Lin (Hebei University of Technology, China)</i>	
ESRTMDet: Robust Recognition of Industrial 2D Barcodes in Complex Environments	227
<i>Jintao Fu (Tsinghua University, China), Peng Cong (Tsinghua University, China), and Yuewen Sun (Tsinghua University, China)</i>	
Small Object Detection Algorithm for Unmanned Aerial Vehicle Based on Multifaceted Feature Information Extraction and Fusion	232
<i>Shasha Yin (Hebei University of Technology, China), Yueran Ge (Hebei University of Technology, China), and Lingling Tian (Hebei University of Technology, China)</i>	
Position-Based Visual Servoing of a Dual-Arm System for Aerial Manipulation	237
<i>Jianchuan Guo (Tiangong University, China), Yuqiu Shang (Tiangong University, China), Zheng Kuai (Tiangong University, China), and Baoquan Li (Tiangong University, China)</i>	

Artificial Intelligence and Machine Learning, #/D

Based on I/Q Signal and AI Algorithms to Identify the Unique Fingerprint of Each Mobile Phone Hardware Device	242
<i>Zhengao Liao (dept. Chongqing Tsingshan Industrial Co., Ltd, China), Yongtao Gao (dept. Shanxi Galaxy Electronic Equipment Factory, China), Siwen Yang (dept. Beijing Brainpower Pharma Consulting Co. Ltd, China), and Kaiqing Fan (dept. Chongqing Tsingshan Industrial Co., Ltd, China)</i>	
An Integrated Learning Model for Online Performance Prediction using LightGBM and Tabnet Fusion Model for Large Laser Facilities	245
<i>Zizhou He (China Academy of Engineering Physics, China), Wenwen Shen (China Academy of Engineering Physics, China), Suicheng Li (China Academy of Engineering Physics, China), and Jun Luo (China Academy of Engineering Physics, China)</i>	
Research on a New Operating System R&D Model Based on the Open Source Community	249
<i>Qingbo Wu (National University of Defense Technology, China), Jie Yu (National University of Defense Technology, China), Xiaodong Liu (National University of Defense Technology, China), Bin Ji (National University of Defense Technology, China), Jinzhu Kong (Kylin Software Co. LTD, China; Nankai University, China), and Wenzhu Wang (Haihe Lab of ITAI, China)</i>	
Feature-Based Local Ensemble Framework for Multi-Agent Reinforcement Learning	255
<i>Xinyu Zhao (Beihang University, China), Jianxiang Liu (Beihang University, China), Faguo Wu (Beihang University, China), and Xiao Zhang (Beihang University, China)</i>	

DD-GNN: Graph Neural Network Based on Diffusion and Denoising Model for Link Prediction ...	261
<i>Xueqian Huang (Wuhan digital engineering institute, China), Yuliang Zhu (Wuhan digital engineering institute, China), and Juntao Liu (Wuhan digital engineering institute, China)</i>	
Autism Classification Based on Multi-Atlas Graph Attention Networks and Metric Learning ...	266
<i>Danyang Wang (Zhengzhou University, China), Shuxu Zhao (Zhengzhou University, China), and Renping Yu (Zhengzhou University, China)</i>	
A Classification Study of Alzheimer's Disease Based on Siamese Residual Networks	271
<i>Shuxu Zhao (Zhengzhou University, China), Danyang Wang (Zhengzhou University, China), and Renping Yu (Zhengzhou University, China)</i>	
JavaLLM: A Fine-Tuned LLM for Java Programming Education	276
<i>Jingying Zhang (Hunan Urban Professional College, China) and Kang Liu (Hunan Urban Professional College, China)</i>	
Research on Named Entity Recognition Method for Railway Collapse-Related Accident Summary Text	281
<i>Xiaoqin Lian (Beijing Technology and Business University, China), Haoyang Yuan (Beijing Technology and Business University, China), Yong Shi (China State Railway Group Corporation Limited, China), Zhibo Cheng (China Academy of Railway Sciences Corporation Limited, China), Yunmei Feng (China Academy of Railway Sciences Corporation Limited, China), Kexin Bao (Beijing Technology and Business University, China), Chao Gao (Beijing Technology and Business University, China), and Yonggang Gong (Beijing Technology and Business University, China)</i>	
A Python Course Online and Offline Hybrid Classroom Management System Combining RN and SSD.....	285
<i>Wei Dai (Wenhua College, China)</i>	
Sampled-Data Synchronization of Quaternion-Valued Neural Networks by Non-Decomposition Method	290
<i>Ning Li (Henan University of Economics and Law, China), Hanyin Li (Henan University of Economics and Law, China), Dongyu He (Henan University of Economics and Law, China), and Yizhong Wang (Henan University of Economics and Law, China)</i>	
A Seismic Response Calculation Method Combining Support Vector Machine and Deep Neural Network	295
<i>Qingqing Ma (Xinjiang Vocational & Technical College of Communications, China) and Liping Zhao (Xinjiang Vocational & Technical College of Communications, China)</i>	
An Automated Measurement Method for Deformity Parameters Required for Taylor Spatial Frame Correction	300
<i>Cheng Chang (Hebei University of Technology, China), Hao Sun (Hebei University of Technology, China), and Xin Guo (Hebei University of Technology, China)</i>	
A Novel Indoor Positioning Algorithm using Bluetooth Beacon Based on Improved Trilateration	305
<i>Ziqian Li (Wuhan Textile University, China), Yang Li (Wuhan Institute of Technology, China), Qian Lei (Wuhan Institute of Technology, China), Yuchen Yang (Wuhan Institute of Technology, China), Mengying Lin (Wuhan Institute of Technology, China), and Zixin Huang (Wuhan Textile University, China)</i>	

SMILES-ANN for Vapor-Liquid Phase Equilibrium Prediction	309
<i>Jianfei Xue (Hebei University of Technology, China) and Wei Zhang (Hebei University of Technology, China)</i>	
Phase Equilibrium Prediction Based on Graph Neural Network	314
<i>Jinke Sun (Hebei University of Technology, China) and Wei Zhang (Hebei University of Technology, China)</i>	
Modeling Pedestrian Dynamics Based on Reinforcement Learning	319
<i>Kun Li (Hebei University of Technology, China) and Qianling Wang (Hebei University of Technology, China)</i>	
The Optimization of TSK Regression Model by FCM, Droprule and Lion	325
<i>Yuhong Qin (Hebei University of Technology, China) and Likui Wang (Hebei University of Technology, China)</i>	
Application Exploration of Digital Twin Technology in Second-Loop System of Nuclear Power Plants	330
<i>Zheng Ma (Hebei University of Technology, China), Xi Chen (Hebei University of Technology, China), Zhanghui Gao (Hebei University of Technology, China), Qiang Jin (Hebei University of Technology, China), and Hongli Wei (Hebei University of Technology, China)</i>	
Satellite Dynamics Modeling and Characteristic Analysis Based on Modelica	335
<i>Bo Ni (Shanghai Jiaotong University, China), Lifeng Xi (Shanghai Jiaotong University, China), and Xianglin Wang (Suzhou Tongyuan Software & Control Technology Co., Ltd, China)</i>	

Cybersecurity and Optimization Algorithms, #/E

An Improved Observer-Based Security Estimation Scheme for Networked Control Systems with Deception Attacks	339
<i>Hongjie Gao (Hebei University of Technology, China), Hongchao Li (Hebei University of Technology, China), Jianchao Zhao (Hebei University of Technology, China), and Jiao Liu (Hebei University of Technology, China)</i>	
A Multi-Objective Artificial Physics Optimization Algorithm Based on Two-Phase Search	344
<i>Huihua Zhang (Taiyuan University of Science and Technology, China) and Liping Xie (Taiyuan University of Science and Technology, China)</i>	
STR-AF: An Adversarial Monitoring Framework with Spatial-Temporal Representation and Adaptive Fusion	349
<i>Chenyong Zhu (Anhui University, China), Wenqian Zhang (Anhui University, China), and Kai Zhong (Anhui University, China)</i>	
Anti-Attack Control of Positive Cyber-Physical Systems using Linear Programming	354
<i>Pengcheng Zhu (Hainan University, China), Siyu Zhong (Hainan University, China), Wei Xing (Hainan University, China), and Junfeng Zhang (Hainan University, China)</i>	
Web Application Vulnerabilities	359
<i>Stephen McNally (Ulster University, UK) and Kevin Curran (Ulster University, UK)</i>	
An Improved Hybrid Aquila Optimizer and Pigeon-Inspired Optimization Algorithm with Its Application in PID Parameter Optimization	367
<i>Dongning Chen (Yanshan University, China), Xinwei Du (Yanshan University, China), Haowen Wang (Yanshan University, China), Qinggui Xian (Yanshan University, China), Jianhao Sha (Yanshan University, China), and Chengyu Yao (Yanshan University, China)</i>	

Optimization of a Prefractionation Column using Improved Firefly Algorithm	372
<i>Yifan Huang (Beijing University of Chemical Technology, China), Bin Wang (Beijing University of Chemical Technology, China), Zeyu Wang (Beijing Pipeline Co., Ltd., China), and Qibing Jin (Beijing University of Chemical Technology, China)</i>	
Multi-Parameter Optimization of VIV Energy Harvesting System Based on Black-Winged Kite Algorithm	376
<i>Guozheng Li (Beijing University of Chemical Technology, China), Kangjie Zhu (Beijing University of Chemical Technology, China), Zhiqing Li (Beijing University of Chemical Technology, China), Haomin Chen (Beijing University of Chemical Technology, China), Wenqi Zhang (Beijing University of Chemical Technology, China), and Jieliang Chen (Shenzhen Xuantie Bladeless Wind Power Technology Co. LTD., China)</i>	
A Parking Space Arrangement Algorithm Based on the Agent Behavior Guidance and PER-D3QN	385
<i>Lanqi Sun (Zhejiang Sci-Tech University, China), Yiyun Kang (Zhejiang Sci-Tech University, China), and Wei Shen (Zhejiang Sci-Tech University, China)</i>	
Multi-Objective Optimization of Permanent Magnet Synchronous Generator Considering Control Parameter and Structural Parameter	390
<i>Weibin Liu (Hebei University of Technology, China), Jie Li (Hebei University of Technology, China), and Shuoyang Wu (Hebei University of Technology, China)</i>	

Robotics and Automation, #/F

Trajectory Tracking Control for Manipulator Considering Nonlinear Characteristics	395
<i>Dongyu Tian (Xi'an Polytechnic University, China), Jiaqing Feng (Xi'an Polytechnic University, China), Lei Zhang (Xi'an Polytechnic University, China), and Rong Tian (Xi'an Polytechnic University, China)</i>	
Optimization of Fracture Reduction Robot Controller	401
<i>Baichuan An (Hebei University of Technology, China), Jianwen Chen (Southern University of Science and Technology Hospital, China), Minghe Liu (Hebei University of Technology, China), Minghuan Yin (Hebei University of Technology, China), Zicheng Song (Hebei University of Technology, China), Chao Zhuang (Hebei University of Technology, China), Cheng Chang (Hebei University of Technology, China), and Hao Sun (Hebei University of Technology, China)</i>	
Constructing an Intelligent Streetlight Control System Based on Edge-Cloud Collaboration	406
<i>Peng Chen (Hebei University of Technology, P. R. China), Xu Chen (Hebei University of Technology, P. R. China), and Jiawei Kang (Hebei University of Technology, P. R. China)</i>	
Fall Monitoring System for the Elderly by Integrating Multi-Sensor and Intelligent Algorithm	411
<i>Xiangyu Gong (Wuhan Textile University, China), Qian Lei (Wuhan Institute of Technology, China), Mengying Lin (Wuhan Institute of Technology, China), Xinyan Hu (Wuhan Institute of Technology, China), Binyi Lian (Wuhan Institute of Technology, China), and Zixin Huang (Wuhan Textile University, China)</i>	

Research on Autonomous Ships for Collision Avoidance Based on Improved Artificial Potential Field Method	415
<i>Hanxuan Zhang (Dalian Maritime University, China), Jun Ning (Dalian Maritime University, China), Yuchi Cao (Dalian Maritime University, China), and Yukun Sun (Dalian Maritime University, China)</i>	
An Improved YOLOv7 Model with SimAM for Wind Turbine Blade Defects Detection	421
<i>Peng Chen (Hebei University of Technology, China), Bin Lin (Hebei University of Technology, China), and Xu Chen (Hebei University of Technology, China)</i>	
A Non-Singular Terminal Sliding Mode Controller for Rigid Spacecraft Attitude Tracking under Actuator Failures and Attacks	427
<i>Yajun Wang (Hebei University of Technology, China), Zuozhuang Yin (Hebei University of Technology, China), Shida Xun (Hebei University of Technology, China), Jiayou Guan (Hebei University of Technology, China), and Wenqiang Ji (Hebei University of Technology, China)</i>	
Finite-Time Formation Tracking under Event-Triggered Scheme of Multi-Agent Systems Subject to Input Saturation	433
<i>Yunlong Xing (Hebei University of Technology, China), Jiao Liu (Hebei University of Technology, China), Xuji Ma (Hebei University of Technology, China), and Hongchao Li (Hebei University of Technology, China)</i>	
Design and Kinematic Modeling of Wrist-Inspired Joints	439
<i>Qingxiang Wu (Nankai University, China; Shenzhen Research Institute of Nankai University, China), Yu'ao Wang (Nankai University, China; Shenzhen Research Institute of Nankai University, China), and Ning Sun (Nankai University, China; Shenzhen Research Institute of Nankai University, China)</i>	
Switch Threshold Event-Triggered Control for Path Following of Underactuated Surface Vessels	444
<i>Yukun Sun (Dalian Maritime University, China), Siwen Liu (Dalian Maritime University, China), Yuchi Cao (Dalian Maritime University, China), and Hanxuan Zhang (Dalian Maritime University, China)</i>	
Adaptive Control of 3D Gantry Crane Considering Rope Length Variation	450
<i>Wenjie Zhang (Hebei University of Technology, China) and Yuzhe Qian (Hebei University of Technology, China)</i>	
Adaptive Stabilization Control for Second-Order Strict Feedback System with Quantized Input via Fully Actuated System Method	456
<i>Xueqi Wu (Liaocheng University, China), Junhao Yuan (Liaocheng University, China), and Wei Sun (Liaocheng University, China)</i>	

Other Applications, #/G

Design of ECT Hardware Circuit for Complex Flow	461
<i>Wenqiang Su (Hebei University of Technology, China) and Wei Zhang (Hebei University of Technology, China)</i>	
Pricing Optimizations of Insurance Products Based on Risk Model Under Surrender	467
<i>Shulei Sun (Nanjing University of Finance and Economics, China) and Weijun Peng (Shanghai Shangnan School, China)</i>	
Intelligent Scheduling of Prefabricated Building Construction Combining BIM and Digital Twins	471
<i>Yingying Gu (Jinan Engineering Polytechnic, China)</i>	

Model Based Quadriceps Activation Strategy in Squat Training with Exhaustion Method Under Different Loads	476
<i>Cong Xie (Hebei University of Technology, China), Xin Guo (Hebei University of Technology, China), and Botao Qie (Hebei University of Technology, China)</i>	
Game-Theoretic Lane Changing Method Based on Dynamic Safe Distance Strategy in the Zero-Trust Framework	480
<i>Fawen Bu (Anhui University, China), Darong Huang (Anhui University, China), and Yuhong Na (Anhui University, China)</i>	
Research on Output Characteristics of Switched Reluctance Generator Based on Finite Element Model	486
<i>Hao Li (HoHai University, China) and Honghua Wang (HoHai University, China)</i>	
MPPT Research for Switched Reluctance Wind Turbine Based on Variable Universe Fuzzy Control	491
<i>Hongguang Chen (HoHai University, China) and Honghua Wang (HoHai University, China)</i>	
FCSA: An ARM+FPGA-Based Software and Hardware Collaboration DNN Classifier	496
<i>Jinlin Ye (Hebei University of Technology, China) and Wei Zhang (Hebei University of Technology, China)</i>	
Research on the Lateral Stability of Intelligent Vehicle Considering in Continuous or Discrete State with Different Modeling Methods	501
<i>Cheng Xiao (Shanghai Maritime University, China), Haiyan Qiang (Shanghai Maritime University, China), Chenglin Zhuang (Shanghai Maritime University, China), and Lusi Zhang (Shanghai Maritime University, China)</i>	
Author Index	505