

2025 International Conference on Intelligent Control and Computing Science (ICICCS 2025)

**Nantong, China
14-16 November 2025**

IEEE Catalog Number: CFP253AO-POD
ISBN: 979-8-3315-5517-7



Copyright © 2025, IEEE

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:	CFP253AO-POD
ISBN (Print-On-Demand):	979-8-3315-5517-7
ISBN (Online):	979-8-3315-5516-0

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

TABLE OF CONTENTS

Convergence of Iterative Learning Control for Stochastic Generalized Systems	1
<i>Zhaoqiang Ge</i>	
Research on Path Planning Method for Unmanned Sweeping Vehicles Based on Hybrid Algorithm	5
<i>Yongjie Ma, Shuxi Chen, Yifan Yu, Depeng Gao</i>	
The Two-Step Heuristic for Dual-machine Flow-Rack Automated Storage and Retrieval System	9
<i>Li Li, Hui Zhang</i>	
Adaptive Fault Response Technology for Transient Stability of Multi-Inverter Systems Supporting Active Synchronization of Clusters	14
<i>Xiankui Wen, Mingjun He, Yang Fang, Mu Ren, Yong Wang, Biao Wang</i>	
UAV 3D Path Planning in Mountainous Environments Based on an Improved Zebra Optimization Algorithm	18
<i>Xin Jin, Huiling Yuan, Yana Lu</i>	
Improved Q-learning Algorithm based for Permutation Flow Shop Scheduling Problem	24
<i>Anran Zhao, Tongming Xu, Bozhao Li, Yang Lu, Huanhu Feng, Kun Jing</i>	
Nonlinear Integral Sliding Mode Control for EMB Based on Novel Clamping Force Model and Disturbance Compensation	29
<i>Liangliang Xu, Bo Huang, Shen Xu, Fei Liu</i>	
VAE-MLPPO: A Lightweight End-to-End Control Framework for Autonomous Driving in Complex Urban Scenarios	39
<i>Lixin Wang, Xiaoci Huang</i>	
Research on Active Intelligent Metasurface Technology for Signal Enhancement in Power Grid 5G Networks	46
<i>Yongjie Tong, Yupeng Gan, Yan Zhang, Dongdong Wang, Bin Lu</i>	
Multi-AUV Collaborative Roundup Position Allocation Based on Improved Auction-Particle Swarm Optimisation Algorithm	50
<i>Guotao Ren, Wenyang Gan</i>	
Gaussian Process-based Interacting Multiple Model Particle Filtering for Nonlinear Stochastic System with Adaptive Transition Probability Matrix	56
<i>Xueqi Yuan, Qing Sun</i>	
On convergence of state observer for a wave system with a non-odd and non-even nonlinear boundary condition	63
<i>Pengxian Zhu, Xiaohua Liu, Ren-Xi Zhao, Qiaomin Xiang, Ze-Hao Wu</i>	
Distributed Proximal Algorithm for Composite Optimization with Nonsmooth Inequality Constraints under Directed Graphs	67
<i>Ziang Liu, Bo Wen, Jian Zhang</i>	
Adaptive control for hybrid stochastic delay systems based on LaSalle's invariance principle	71
<i>Xianqi Bu, Yunhao Liu, Yuyuan Li</i>	

Optimal Tracking Control of Switched Nonlinear Systems Based on Prescribed Performance	75
<i>Di Cui, Siyu Liu, Li Ma, Chuang Ma, Kun Jiang, Ruibing Li</i>	
Existence of solutions for discrete Schrödinger systems with mixed growth nonlinearities	79
<i>Wen Ming, Guanwei Chen</i>	
Dynamic periodic event-triggered adaptive fuzzy output feedback control for active suspension systems	83
<i>Yingjie Zhao, Huiyan Zhang, Ning Zhao</i>	
Optimal Trajectory Tracking Control for Uncertain Unmanned Surface Vehicle via Adaptive Critic Learning	87
<i>Huichao Wang, Pengda Liu, Jun Gou, Yunfei Mu, Huiyan Zhang</i>	
Design and Implementation of a Three-Dimensional Precision Motion Stage Control System Based on Qt Framework	92
<i>Liangcheng Tao, Rongguo Fu</i>	
Adaptive Temperature-Regulated Knowledge Distillation with Domain Alignment for Cross- Domain Learning	97
<i>Da Gao, Yajing Kang, Chao Zheng, Yuting Wu</i>	
Detection of binary neutron star gravitational wave using time-frequency domain deep learning	102
<i>Xinyao Yu</i>	
MVALD: Multi-View Learning Based Log Anomaly Detection Method	107
<i>Hang Zu, Tianmin Xiong, Yongjian Cao, Ke Li</i>	
Design of IGBT Life Prediction Method Based on Particle Filter Algorithm	113
<i>Yu Zhang, Yang Wen, Tadiwa Elisha Nyamasvisva</i>	
A Robust Video Watermarking Algorithm Based on GANs Integrating Spatio-Temporal Features and an Attention Mechanism	118
<i>Hanyu Zhang, Ke Niu, Jun Li</i>	
Research on Dam Deformation Prediction Model Based on Fusion of Transformer and InSAR Data	128
<i>Yong Wei, Yang Liu, Pengfei Cao, Jianbing Lü</i>	
Research on the Construction Method of Power Multi-modal Business Knowledge Base and Its Knowledge Graph	133
<i>Xiya Li, Peng Gao, Wei Wang</i>	
Multivariate Time Series Generation Based on Spatiotemporal Dual-Channel Coding and LSTM-Enhanced Diffusion	139
<i>Qicai Ma, Shunyi Zhao</i>	
Robust FDIA Detection in DC Microgrids Based on Parallel Neural Network Models	145
<i>Yi Wang, Shengyao Luo, Po Wu, Mingyang Liu, Yilin Wang, Zelin Lu</i>	
Research on the method of creating equipment set dataset for large models	150
<i>Aruhan Bao, Qingsen Cai, Rui Feng, Hu Li</i>	
Research on Pointer-Type Scale Instrument Recognition Using Three-Stage Algorithm Framework	156
<i>Fanlong Meng, Yonggang Hu, Yawei Cheng</i>	

Prediction of Effluent COD in Wastewater Treatment Plants Using SG-CEEMDAN-LSTM	162
<i>Yulong Wu, Na Wang</i>	
Research on a Fusion Algorithm for Boundary Violation Detection in Power Transmission and Transformation Construction Scenarios Based on Attention-Gated Recurrent Units	167
<i>Xiaomin Dai, Zhenjun Du, Jin Liu, Yu Xia, Xiaoguang Cheng, Yibin Wang, Feng Chen, Jiawen Yan Xiongfei He</i>	
Research on Big Data-Driven Modeling Method for Dynamic Prediction of Water-Flooding Reservoirs	171
<i>Jia Wei, Qiaoyun Wang, He Shen, Shan He</i>	
A Multimodal Semantic Enhancement Method for Image Retrieval in Construction Project Planning	176
<i>Yuhao Wu, Lu Zhao, Fuqiang Chen, Weijia Liu, Jianjian Yue, Feng Tao</i>	
Research on the Separation of Ownership and Usage Rights of Power Data Elements in a Trusted Virtual Runtime Environment	185
<i>Yue Chen, Ye Liu, Xu Yao, Chenghui Liu</i>	
A Fault Diagnosis Method for Aero-Engine Gas Path Systems under Limited and Imbalanced Data	191
<i>Yuan Tian, Ruyi Tang, Hao Wang, Ying Zhao</i>	