

2025 International Conference on Automation Technology (Automation 2025)

**Kaohsiung, Taiwan
28-30 November 2025**

IEEE Catalog Number:
ISBN:

CFP250Y5-POD
978-1-6654-7793-2



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:	CFP250Y5-POD
ISBN (Print-On-Demand):	978-1-6654-7793-2
ISBN (Online):	978-1-6654-7792-5

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

Embedding CartPole Environment States into the Reward Function for Training and Testing Performance Evaluation	1
<i>Hong-Chang Hsu, Yi-Hsiang Lin, Yu-Shu Chen, Yu-Jen Wang</i>	
Smart Voice Commands Control and E-Braking for Safety in Intelligent Transfer Devices	6
<i>Ilham Saputra, Chin-Yi Cheng, Chen-En Shi</i>	
Development of an Integrated ROS System for Autonomous Navigation and Perception-Based Control in Smart Electric Bus	12
<i>Chen-En Shi, Chin-Yi Cheng, Ilham Saputra</i>	
Intelligent Visual Recognition Assisted Learning Technology and Applications for Pneumatic Technician Certification	18
<i>Yao-Wen Miao, Ayush Pratap, Nai Jui Ou, Yung-Chou Kao</i>	
Bridging Physical and Virtual Robotics: Real-Time Digital Twin with Vision-Based Identification	24
<i>Suphasit Raoruja, Peng Pin-Wei, Yao-Wen Miao, Ayush Pratap, Nai Jui Ou, Yung-Chou Kao</i>	
A Flexible and Efficient Framework for Multigoal Path Planning in Connected Grid Environments	30
<i>Wei-Dian Lai</i>	
Adaptive Token Fusion Transformer for Multi-Modal Object Detection with RGB and Event Data	35
<i>Vi-Minh La, Sin-Ye Zhong, Hsin-Chun Lin, Yung-Yao Chen, Chao-Lung Yang</i>	
Embodied Multi-Agent Planning With LLMs: A Best-of-N Strategy for Efficient Cooperation	41
<i>Cheng-Yen Hsieh, Sin-Ye Zhong, Hsin-Chun Lin, Shang-Lin Li, Yung-Yao Chen</i>	
Optical Emission Spectroscopy and Neural Network Regression for Argon Flow Monitoring in PVD Processes	47
<i>Yu-Chieh Chen, Yi-Cheng Lin, Jin-Yu Shih, Wen-Tse Hsiao, Cheng-Tang Pan</i>	
Verification of Deadbeat Control Performance Improvement Under High Sampling Rate	51
<i>Qige Chen, Tamon Miyauchi, Jun Ishikawa</i>	
A Practice-Driven Framework for Transitioning Drive-by-Wire to Autonomous Driving Systems: A Case Study With a Chrysler Pacifica Hybrid Vehicle	59
<i>Dada Zhang, Chun-Hsing Ho, Md Ruman Islam, Pei-Chi Huang</i>	
Reinforcement-Learning-Based Gait Generation Inspired by Penguin Walking With Attitude Stabilization	65
<i>Monako Toya, Jun Ishikawa</i>	
Toward Automated Quantum Machine Learning: A Review of Principles, Status, Advances, and A Pathway to AutoQML	73
<i>Irene Kahvazadeh, A.C. Fong</i>	
Development of a Robotic Arm Calibration System Using Light Positioning Technology via KAN and Feature Selection	80
<i>Jung-Hsin Lai, Shao-Chieh Tsai, Chin-Te Lin</i>	
A Study on Remaining Tool Life Examination of Dimond Grinding Rod With Image Processing	86
<i>Yen-Wen Chen, Ting-Fong Wang, Chien-Ting Yang, Hao-Yang Lin, Her-Terng Yau</i>	

Development of Coaxial Differential Dual-Beam Interferometer	92
<i>Yung-Cheng Wang, Chung-Ping Chang, Mu-Hung Tsai, Cheng-Chieh Kuo, Yang-Rang Fan</i>	
Multi-Objective Task Allocation and Path Planning in Heterogeneous Multi-Robot Systems Using Hierarchical Framework and Reinforcement Learning	95
<i>S. H. Lo, R. Chen</i>	
Development of Negative Pressure for Reinforcing Adaptive End Effect	101
<i>Yu-Xin Chen, Bo-Cheng Lin, Meng-Ru Wu, Tsung-Liang Wu</i>	
Constructing an Intelligent Home System Control Using Internet of Things	105
<i>Wen-Tsai Sung, Yan-Hua Lai, Indra Griha Tofik Isa, Sung-Jung Hsiao</i>	
Depth Point Cloud–Driven Navigation and Crop Distribution Mapping for Autonomous Robots in Greenhouse Broadcast-Seeding	111
<i>Jyh-Cheng Yu, Chih-Pin Huang, Chih-En Lin</i>	
Analysis and Simulation of Temperature Control in an Indirect Combustion Furnace Using an Auxiliary Fan	117
<i>Ke-Han Su, Yi-Chia Liu, Yu-Heng Chen, Po-Ch Chen, Kun-Cheng Huang, Yin-Syuan Chen</i>	
Vision-Based Detection and Fuzzy-PID Control for Autonomous Floating Waste Collection	123
<i>Jyh-Cheng Yu, Chih-Chia Chang, Yi-Cheng Lin</i>	
Study on Adopting Machine Learning to Predict the Health Condition of the Inhibiting Film in DLP-Type High-Speed 3D Printing with Inhibiting Film to Reduce Separation Force	129
<i>Yih-Lin Cheng, Ching-Jung Hsieh</i>	