

2024 4th International Symposium on AI (ISAI 2024)

**Chengdu, China
25-27 April 2024**



**IEEE Catalog Number: CFP24VQ0-POD
ISBN: 979-8-3503-8908-1**

**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:	CFP24VQ0-POD
ISBN (Print-On-Demand):	979-8-3503-8908-1
ISBN (Online):	979-8-3503-8907-4

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 4th International Symposium on AI (ISAI) **ISAI 2024**

Table of Contents

Preface	vii
Organizing Committee	viii
Reviewers	x
Speakers	xii
Sponsors	xx

Intelligent Algorithms and Computational Models

Research on the Application of Visualization Methods in the Training Process of Neural Networks	1
<i>Zhiyi Liu (Eastmoney Information Co., Ltd., China), Kai Zhang (Eastmoney Information Co., Ltd., China), Yejie Zheng (Eastmoney Information Co., Ltd., China), and Likun Zheng (Eastmoney Information Co., Ltd., China)</i>	
Solving Math Word Problems by Dual Feature Fusion Graph Neural Network	6
<i>Jiayi Lin (Jiangnan University, China), Hongbin Xia (Jiangnan University, China), and Yuan Liu (Jiangnan University, China)</i>	
Multi-Vessel Area Target Search Model Based on MADDPG Algorithm	11
<i>Fangyue Xiang (Chengdu Technological University, China)</i>	

Computer Assisted Painting and Image Processing

Fire Detection Method Based on Improved DETR	16
<i>Ruize Ge (Zhejiang University, China; Hangzhou City University, China), Xiaoyin Hu (Hangzhou City University, China), and Duo Xiao (Hangzhou City University, China)</i>	
Multiple Object Tracking Based On Feature Fusion Of Channel-Wise Transformer	21
<i>Yuanhao Li (Southeast University, China) and Yifeng Zhang (Southeast University, China)</i>	
A Study of Introducing Real-Time Object Detection Algorithm into Screen Printing Thermal Transfer Printed Label Defect Detection	27
<i>Chen-Hao Lin (National Chin-Yi University of Technology, Taiwan) and Chia-Pao Chang (National Chin-Yi University of Technology, Taiwan)</i>	

Focal-UNet: Complex Image Semantic Segmentation Based on Focal Self-Attention and UNet	33
<i>Haosong Gou (University of Electronic Science and Technology, China), Lei Xiang (China Mobile Group Sichuan Co., Ltd., China), Xiaonian Chen (XinRun Information Technology Co., LLC, China), Xin Tan (China Mobile Group Sichuan Co., Ltd., China), and Lei Lv (Chengdu Yunzhan Technology Co., Ltd, China)</i>	
Computer-Aided Industrial Design: A Case Study of 3D Modeling and Rendering	38
<i>Chao Chai-Chun (Chaoyang University of Technology, Taiwan), Huang Yu-Che (Chaoyang University of Technology, Taiwan), and Feng Chung-Shun (Chaoyang University of Technology, Taiwan)</i>	

Machine Learning Models and Intelligent Computing in Modern Electronic Systems

Energy Management Strategy for Fuel Cell Hybrid Emergency Power System Based on Deep Reinforcement Learning	43
<i>Jingyi Xi (Zhejiang University, China; Hangzhou City University, China), Xiaoyin Hu (Hangzhou City University, China), and Duo Xiao (Hangzhou City University, China)</i>	
DilateTracker: Feature Fusion Dilated Transformer for Multi-Object Tracking	48
<i>Fan Wu (Southeast University, China) and Yifeng Zhang (Southeast University, China)</i>	
Students' Motivation and Perceptions in an AI Chatbot-Based Climate Change Classroom	55
<i>Hui-Wen Huang (Shaoguan University, China) and Tsung-Shu Chang (Shaoguan University, China)</i>	
Using Deep Learning Networks to Process Corona and Heating Characteristics of Large Fittings in UHVDC Valve Halls and Structural Optimization	61
<i>Shiling Zhang (Electric Power Research Institute of State Grid Chongqing Electric Power Company, China), Baojia Deng (Electric Power Research Institute of State Grid Chongqing Electric Power Company, China), Liangjun Dai (State Grid Chongqing Electric Power Company Chongqing Electric Power Research Institute, China), and Yongsheng He (State Grid Chongqing Electric Power Company Chongqing Electric Power Research Institute, China)</i>	
Author Index	69