## 2023 3rd International Symposium on Artificial **Intelligence and Intelligent Manufacturing (AIIM 2023)**

Chengdu, China 27-29 October 2023



**IEEE Catalog Number: CFP23UH3-POD ISBN**:

979-8-3503-9384-2

## Copyright © 2023 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:
 CFP23UH3-POD

 ISBN (Print-On-Demand):
 979-8-3503-9384-2

 ISBN (Online):
 979-8-3503-9383-5

## **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**

Shallow machine learning fault diagnosis for industrial equipment based on vibration data Yunxia Wang, Xiaolin Sun, Yun Shi	1
Research on Adaptive Adjustment Algorithm for Intelligent Home Lighting Linzhi Zhou, Chen Yuan	9
End-to-End Delay Testing and Research on the Internet Zihan Gao, Yu Hua, Xiaozhen Jin, Shiyao Liu, Lei Tang	13
Research on machine vision decision-making system for self-driving logistics vehicles Yuxiao Tang, Xingzhi Lin	19
Dynamic event-triggered mechanism-based resilient $H\infty$ state estimation for neural networks with random parameters and time delays Na Li, Hongjian Liu, Yufei Liu, Ran Zhang	23
Research on Radar Target Recognition Algorithms  Yijie Zhang, Junjie Xi, Shaoqi Wang, Dengwei Gao, Guannan Chang	30
Research on multi-modal data fusion technology based on automotive spot welding process Zhuang Cong, Ting Wang, Meng Bi, Jingyang Zhu, Yuzheng Zhang, Pengju Xing, Ying Yang	34
Knowledge Graph Construction for Automated Automotive Welding Processes Tingting Deng, Ting Wang, Jun Wang, Jingyang Zhu	39
Particle Swarm Optimization Based Support Vector Machines in Motion Imagery Hongmin Wang, Xuewen Shi, Rui Wang, Zhaoning Wang	46
<b>Dual Contrastive Learning for Unpaired Image Dehazing</b> Wei Wang, Jintao Gu, Siyuan Zhang	51
A Target Tracking Algorithm Based on Channel Attention and Spatial Attention Yuan Su, Xiaolei Liu, Xiaobo Guo	57
Research on Multi-scene and Multi-terminal Joint Inspection Method of Substation Based on Machine Vision  Yun Chen, Ying Zhang, Duanjiao Li, Jianming Liu	62
Research on an Improved Unsupervised Algorithm for Wood Image Stitching Zhilian Guo, Zhihong Liang, Mingming Qin	67
Inter-Pose: An Interactive 3D Modeling Based on 6D Pose Estimation Yuzhi Li, Xingjun Wang	74
<b>Design of Handwritten Mongolian Recognition System Based on FPGA</b> Yonghui Li, Yana Wang, Chong Feng, Zhan Shi	78
Li-ion battery capacity prediction based on artificial intelligence for production line Yuebo Yuan, Xiangdong Kong, Yihui Li, Hewu Wang	82

Field weakening speed expansion control of permanent magnet synchronous motors based on stochastic gradient descent	86
Yi Wang, Hongliang Liu, Jian Liu, Chenbin Ma	
A Design of Vibration Acceleration Signal Integrator Based on LabVIEW Jie Zhou	92
Using lightweight YOLOv5 model on wearable devices for indoor natural gas work behavior recognition	96
Zhangfa Yan, Lian Zhu, Zi Wang	
<b>Task-Oriented Robotic Grasping for Intelligent Manufacturing</b> Xiang Gao, Zhiqing Wen	101
Mechanical Cylindrical Part Surface Defect Detection of Components using YOLOv5 and Attention Mechanism  Yongli Zhu, Bin Liu, Shaozhen Liu, Dongheng Wang, Yansong Ni, Min Wang, Yu Wang, Changhua Zhang	105
Modeling optimization of distributed prefabricated manufacturing system based on iterative taboo search algorithm  Jingsong Cao, Fan Zhang, Yongqi Lu, Zhi Li	111
Survey on Reliability Engineering for AI Software Systems: An Extension Based on the IEEE 1633 Standard Cong Pan, Jun You, Yan Gao	116
Robot Dynamic Path Planning Based on Improved Firefly Algorithm Qianli Wei, Chao Chen, Xueting Pang, Mingxi Huang	122
Ship Residuary Resistance Prediction Based on Support Vector Machine Yan Mai, Xuegang Wang	126
A backstepping control strategy of variable mass quadrotor based on fault observe Zhaoning Wang, Xuanang Qu, Xuewen Shi, Hongmin Wang	132
Application Research of Digital Virtual Human Models Based on Sensor Data Xiaofei Qiu, Qingmeng Mao	137
<b>Detection of Safety Helmet Wearing Method Based on SSD and Area Ratio</b> Zhen Fan, Xiaoli Feng, Lina Li	142
Author Index	146