2021 IEEE International Conference on Industrial Application of Artificial Intelligence (IAAI 2021)

Harbin, China
25 December 2021

IEEE Catalog Number: CFP21Z34-POD
ISBN: 978-1-6654-6581-6

Copyright © 2021 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:	CFP21Z34-POD
ISBN (Print-On-Demand):	978-1-6654-6581-6
ISBN (Online):	978-1-6654-9506-6

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

Contents

Intelligent Detection Method of Spoken English Mispronunciation based on Machine Learning.....1
Zhiyu Zhou

Multimedia English Online Learning Behavior Intelligent Monitoring System Based on Face Recognition.....7
Zhiyu Zhou

Research on a Multimedia Video Image Coding Method Based on Machine Learning.....14
Xu Liu

Evaluation Method of Immersive Drama Stage Presentation Effect Based on Data Mining.....21
Zhongxuan Sun

English Chinese Cross Language Information Retrieval Method Based on Association Pattern Minin.....27
Dong Xu

Design of a Social Network Data Deep Learning Recommendation System Guided by User Prefer.....33
Wei Yu

Design of a Hydrogeological Monitoring System Based on a Computer Network.....40
Yongjie Zheng, Pan Wang and Yanjun Wang and Guangsheng Fu

Design of a Personalized Recommendation System for Ideological and Political Courses in Colleges and Universities Based on a Collaborative Filtering Algorithm.....47
Zhenrong Zhang

Prediction Method of the Industrial Economic Operation Index Based on an Improved Genetic Algorithm.....54
Cuiqin Liu

Multi Skill Human Resource Group Intelligent Scheduling Method Based on Reinforcement Learning.....61
Ling Niu

Research on Tension Setting Out Construction of an Overhead Transmission Line Based on Intelligent Real Scene Modeling.....68
Jiangang Yin, Wenjie Xu and Keqi Zhang and Mingxun Hu

Whole-chain supervision method of industrial product quality and safety based on knowledge graph.....74
Junwei Zhang, Jiaqi Liu, Yujie Zhu, Fan He, Su Feng, Jing Li

Human Resource Performance Management Evaluation Based on Big Data Mining.....79
Ying Ye

Intelligent Calibration Method of Urban Publicity Translation Based on Machine Learning.....86
Zhenli Li

Intelligent Encryption Model of Financial Information Based on Big Data.....93
Xianyan Xiao

Performance Evaluation Method of Enterprise Human Resource Management Based on Machine Learning.....100
Taiping Pan

Research on a Financial Investment Crisis Early Warning Model of Listed Companies Based on a Random Forest Algorithm.....106
Ziping Li

Statistical Method of Social Audit Risk Based on Machine Learning in the Context of Big Data.....111
Junlin Li

Intelligent Classification Method of Basic Elements of Chinese Ink Painting Based on a Convolution Neural Network.....117
Yang Liu

Simulation of Vertical Temperature Distribution in Green Building Space Based on the Niche Genetic Algorithm.....123
Ke Wang, Wanling Mao

Evaluation Method of Damaged Status of Offshore Structures Based on Fuzzy Mathematics....131
Jiming Zhang

Visualized Management System of Prefabricated Construction and Installation Engineering Based on BIM and Machine Learning.....138
Yuxiang Ma, Enmao Qiao

Research on Accurate Prediction of Operating Energy Consumption of Green Buildings Based on Improved Machine Learning.....144
Yuxiang Ma, Enmao Qiao

Precise Identification of Network Security Threats Based on User Behavior.....149
Duan Liang, Huahui Lv and Jiafa Zhang

Ground Monitoring Method of Overhead Line Traction Tension Setting out Process Based on Information Integration.....155
Jiehao Li, Jinge Li and Weihong Lv and Zhiyin Wang

Intelligent Evaluation System of College Students' Mental Health Based on Mobile Terminal....162
Haiyan Zhao

Hierarchical Model of Social Responsibility of Heavy Industry Enterprises in the Age of Artificial Intelligence.....169
Nannan Yang

Prediction Method of Marine Environmental Data Based on Time Series Analysis.....176
Wenyan Wang

Cloud Data Backup and Recovery Method Based on the DELTA Compression Algorithm.....183
Qing Wang

Research on Accounting Data Quality Detection Method Based on Wavelet Transform.....189
Ping'e Yang, Shuang Lin

Design of Intelligent Extraction System of Chemical Characteristics of Natural Drugs Based on Big Data.....195
Linjuan Dong, Meng Wang and Yu Shi and Zheng Wang

Homology Detection of Malicious Codes Based on a Fuzzy Graph Neural Network.....202
Xianchun Zhou

Fault Detection Method of Railway Communication Signal Transmitting Equipment Based on a Wavelet Singular Transform.....208
Ting Xie

Research on Embedded Speech Recognition System Based on Artificial Intelligence.....215
Yanning Zhang

Multiview Face Automatic Recognition Method Based on Geometric Characteristics.....221
Yingjian Kang, Lei Ma

Research on a Comprehensive Evaluation Method of Business Administration Performance Based on Big Data Analysis.....228
Li Wang

Multichannel 3D ink painting rendering model based on the LMS algorithm.....235
Yu Guo, Fuyun Kang

Computer Network Communication Data Encryption System Based on Improved RSA Algorithm.....241
Qijian Tang

Risk Identification Method of Overhead Line Tension Setting out Construction Based on Stacking Depth Convolution.....248
Wenjie Xu, Jiangang Yin and Zhaohu Zhang and Zan Li

Two-Level Planning System for Location Selection of Logistics Distribution Center Based on Internet Of Things Technology.....255
Qingqiang Huang

Evaluation Method of Enterprise Environmental Accounting Information Disclosure Quality Based on Data Classification.....262
Xiaoyu Guan, Yanlong Wang and Lihong Song

Design of an Enterprise Financial Risk Management System Based on Big Data Mining.....269
Jianjun Sun, Shuxiang Wang and Fang Yuan

Image Edge Detection Algorithm of Machined Parts Based on Mathematical Morphology.....275
Jinjian Chen

Multimodal Traditional Art Image Association Mining Method Based on a Genetic Algorithm.....281
Fuyun Kang, Yu Guo

Data Transmission Method of a Wireless Digital Microwave Communication System Based on the Zigzag Permutation Algorithm.....288
Liwei Yin

German Professional Vocabulary Memory Big Data Intelligent Classification Method Under the Background of Cross-Border E-Commerce.....295
Yueqi Wu

Design of a Financial Information Security Encryption System Based on a BP Neural Network.....301
Nannan Zhao, Miaona Chen

University Teaching Management Information System Based on Intelligent Data Mining.....307
Haibo Jiang, Yihuo Jiang

A Text Statistics Method for Professional Teaching Resources Based on Different Features and Big Data.....312
Yu Shi, Yuan Fang and Bingqian Zhang

Real Time Query Method of Cleaning Quality Database of Medical Experimental Instruments Based on PSO.....318
Wenli Zhang, Siqi Geng and Qian Li and Guorong Liu

Digital Teaching and Training System of Vocational Colleges Based on a Cloud Platform.....324
Wenda Xie

Design of a Remote Meeting Real-Time Attendance System Based on the YOLO Algorithm.....330
Yanhua Zhang

Design of Online Teaching Management System for Higher Vocational Colleges.....337
Fei Ke

Intelligent Network Security Situation Prediction Method Based on Deep Reinforcement Learning.....343
Jiayu Su

Intelligent Evaluation Model of the Talent Training Quality of Engineering Cost Specialty Based on a Genetic Algorithm.....349
Qun Wang

CNN-based Evaluation Method of Academic Innovation Effect of American Research Universities.....355
Lina Sun, Sitan Li

Personalized Recommendation Algorithm for Curriculum- and Politics-Oriented Hybrid Teaching Resources.....361
Guogen Fan, Fang Meng

Dynamic Attendance Checking System Based on a BP Neural Network and Biological Characteristics……367
Xiaoyun Li

An Intelligent Writing Training System of Current Situation Appraisal Composition for Higher Vocational Language Teaching……373
Fei Ke

Grounding Fault Detection Method Of Intelligent Distribution Network Under Power Marketing Informatization……379
Hong Wu

Design of a 3D reconstruction model of multiplane images based on stereo vision……385
Keqi Zhang, Mingnian Zhang

Design of a Rural Idle House Resource Information Management System Based on the Ssh Framework……392
Bomei Tan

Method for Predicting Compound Properties in Drug Development Based on Machine Learning……398
Yuan Fang, Yu Shi and LinJuan Dong and Meng Wang

Innovative applications and reflections on nontouch design in the prevention and control of epidemics……405
Menghan Xu and Tiejun zhu

3D Virtual Sand Table Display System of Industrial Park Based on Augmented Reality……410
Hongyan Lu, Jie He and Caichun Cen

Lightweight Data Integration and Fusion Method Based on a Convolutional Neural Network……416
Rui Tie

Research on a Financial Crisis Early Warning Model Based on a Stochastic Forest Algorithm……422
Pei Wang

Research on Vulnerability Exploitation and Detection Technology Based on Big Data Analysis……429
Lei Ma

User preference-based data partitioning top-k skyline query processing algorithm……436
Zhiyun Zheng, Minghao Zhang, Mengyao yu, Dun Li, Xingjin Zhang

Blockchain Smart Contract Virtual Machine Optimization Technology for Domain Name Systems……445
Shiyu Wang, Keyuan Wang, Linpeng Jia, Lei Yu, Zhongcheng Li, Yi Sun, Jun Li, and Jihua Zhou

Performance Research of SWIPT-NOMA cooperative network based on PRS……452
Song Chuanwang, Shao Wen, Zhang Haisong, Li Enyu, Hu Keyong

An Optimized L_1-Medial Skeleton Extraction Algorithm……460
Bin Lu, Qiang Wang and Xiaoming Fan

NN-tree: A technology for accelerating the query process of a high-dimensional data tree index structure by using a neural network……467
Yu Li, Lingli Li

A Working Face Rock Pressure Forecasting Model Based on Attention-BiLSTM……476
Pengtao Jia, Chengyixiong Xu and Fengjing Guo

Design and Implementation of a Distributed Database Benchmark……483
Man Yang, Xun Han, Yu Yan and Weize Dong

Design and Implementation of Benchmarks for Multimodal Databases……490
Man Yang, Mingwang Zhang, Tao Leng, Weize Dong, Yu Yan

Research on Industrial Product Quality and Safety Emergency Detection Based on Multifeature Fusion……495
Cong Liu, Yunfan Gao, Junwei Zhang, Jiaxin Liu, Su Feng

A New Rolling Bearing Fault Diagnosis Method Based on Few Samples……500
Xinqi Shen, Mengzhou Zhang, Mei Li, Quanbo Lu