

2024 International Conference on Telecommunications and Power Electronics (TELEPE 2024)

**Frankfurt, Germany
29-31 May 2024**

Pages 1-521



**IEEE Catalog Number: CFP243A2-POD
ISBN: 979-8-3503-8000-2**

**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:	CFP243A2-POD
ISBN (Print-On-Demand):	979-8-3503-8000-2
ISBN (Online):	979-8-3503-6921-2

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 International Conference on Telecommunications and Power Electronics (TELEPE) **TELEPE 2024**

Table of Contents

Message from Committee xxv

TELEPE 2024

Application of Machine Learning Book Recommendation Strategy Based on User Reading Preferences in Smart Libraries	1
<i>Jia Liu (Shanghai Urban Construction Vocational College Graphic Information Center, China)</i>	
A Comprehensive Transportation Network Planning Model Oriented by Multi- Modal Transport	7
<i>Dongsheng Gu (Jilin Provincial Transport Scientific Research Institute, China) and Feiyan Li (Jilin Jianzhu University, China)</i>	
Intelligent Optimization Algorithm Based on Reinforcement Learning in the Process of Wax Removal and Prevention of Screw Pump	15
<i>Chenxi Zhang (No.4 Operation Area of No.6 Oil Production Plant of Daqing Oilfield Co., Ltd, China)</i>	
Intelligent Optimization Algorithm Design of Data Exchange Between UAV Front-End Sensing Equipment and Multi-Source Heterogeneous System	21
<i>Jie Yang (Hainan Power Grid Transmission & Maintenance Branch Corp., China), Yunfeng Xia (Hainan Power Grid Transmission & Maintenance Branch Corp., China), and Qishuai Liang (Hainan Power Grid Transmission & Maintenance Branch Corp., China)</i>	
Research on the Prediction Model of Green Building Carbon Emission Based on Computer Big Data	27
<i>Yufeng Zheng (Taizhou Vocational and Technical College, China), Jiaxuan Li (Taizhou Vocational and Technical College, China), Sijie Wang (Taizhou Vocational and Technical College, China), Danlei Ying (Taizhou Vocational and Technical College, China), and Chew Boon Cheong (Universiti Teknikal Malaysia Melak, Malaysia)</i>	
Intelligent Analysis Algorithm of Online Collaborative Learning Behavior of Chinese-Foreign Cooperative Students Combining Deep Learning and Transfer Learning	32
<i>Weihua Zhou (Taizhou Vocational and Technical College, China) and Nan Wang (Taizhou Vocational and Technical College, China)</i>	

Research on Sports Training Data Transmission and Processing Technology Based on 5G Wireless Mobile Network	37
<i>Jingguang Xie (Guangdong University of Science and Technology, China) and Xinnian Cheng (Jieyang Polytechnic, China)</i>	
Implementation of Intelligent Automatic Speech Recognition and English Speaking Ability Evaluation Algorithm Based on BP Neural Network	42
<i>Zhuoying Zhou (Wuhan Railway Vocational College of Technology, China), Junlin Zhai (Wuhan Railway Vocational College of Technology, China), and Lei Zhao (Wuhan Railway Vocational College of Technology, China)</i>	
Research on the Application of Computer Big Data Technology in Garden Plant Health Monitoring	48
<i>Hairong Tang (Jieyang Polytechnic, China) and Xiaoming Liu (Jieyang Polytechnic, China)</i>	
A Human Resources Recruitment Recommendation System Based on Adaptive Metaheuristic Algorithm	53
<i>Kang Du (Jiangxi Institute of Applied Science and Technology, China)</i>	
Electric Power Engineering Cost Analysis Based on Improved Random Forest Algorithm	59
<i>Menglan Shi (Economic Research Institute of State Grid Zhejiang Electric Power Company, China), Yuhang Ying (Economic Research Institute of State Grid Zhejiang Electric Power Company, China), Mengqi Pan (Economic Research Institute of State Grid Zhejiang Electric Power Company, China), Ling Qiu (Economic Research Institute of State Grid Zhejiang Electric Power Company, China), and Lin Jin (Zhejiang Huayun Information Technology Co., Ltd., China)</i>	
Fault Diagnosis Model of Power Transmission and Transformation Equipment Based on Neural Network and Genetic Algorithm	65
<i>Chang Sun (Zhenjiang Power Supply Branch of State Grid Jiangsu Electric Power Co. Ltd, China), Xiang Zhang (Zhenjiang Power Supply Branch of State Grid Jiangsu Electric Power Co. Ltd, China), and Junhan Xu (Zhenjiang Power Supply Branch of State Grid Jiangsu Electric Power Co. Ltd, China)</i>	
Application of Improved GRA-TOPSIS Model in Electric Power Engineering Construction Risk Evaluation	71
<i>Duoduo Yao (Economic Research Institute of State Grid Zhejiang Electric Power Company, China), Yuhang Ying (Economic Research Institute of State Grid Zhejiang Electric Power Company, China), Nuoya Lv (Economic Research Institute of State Grid Zhejiang Electric Power Company, China), Ling Qiu (Economic Research Institute of State Grid Zhejiang Electric Power Company, China), and Zhicheng Liu (Zhejiang Huayun Information Technology Co., Ltd., China)</i>	
Audit Data Traceability and Verification System Based on Blockchain Technology and Deep Learning	77
<i>Yuting Zhao (Shandong Youth University of Political Science, China)</i>	
Computer Information Technology in the Digital System of Sports Scoreboard	83
<i>Zhen Liu (Huanggang Normal University, China) and Ting Cao (Huanggang Normal University, China)</i>	
Design of Big Data Scheduling Optimization Algorithm Based on Deep Reinforcement Learning	88
<i>Xiao Chen (Guangdong Polytechnic of Science and Technology, China)</i>	

Analysis of Influencing Factors and Prediction of Kinetic Energy of Tennis Based on Factor Analysis and LSTM Model	94
<i>Zhiguo Yang (Fuyang Normal University, China) and Ying Cui (Fuyang Normal University, China)</i>	
Adaptive Adjustment Algorithm of Anti-Galloping Control Strategy of Torsion Suppression Ring Based on Reinforcement Learning	101
<i>Zhigang Guo (Super High Voltage Company of State Grid Heilongjiang Electric Power Company Limited, China), Jinfu Han (Super High Voltage Company of State Grid Heilongjiang Electric Power Company Limited, China), Wei Yang (Super High Voltage Company of State Grid Heilongjiang Electric Power Company Limited, China), Peiyong Yu (Super High Voltage Company of State Grid Heilongjiang Electric Power Company Limited, China), and Mengyang Wang (Super High Voltage Company of State Grid Heilongjiang Electric Power Company Limited, China)</i>	
Design and Simulation of Small Tiltrotor Unmanned Aerial Vehicles for Special Equipment Accident Investigation	107
<i>Ligui Kang (Chongqing Special Equipment Inspection and Research Institute, China; Key Laboratory of Electromechanical Equipment Security in Western Complex Environment for State Market Regulation, China), Yongjun Qiu (Chongqing Special Equipment Inspection and Research Institute, China; Key Laboratory of Electromechanical Equipment Security in Western Complex Environment for State Market Regulation, China), Dugang Kang (Chongqing Special Equipment Inspection and Research Institute, China; Key Laboratory of Electromechanical Equipment Security in Western Complex Environment for State Market Regulation, China), Yanyun Huang (Chongqing Special Equipment Inspection and Research Institute, China; Key Laboratory of Electromechanical Equipment Security in Western Complex Environment for State Market Regulation, China), Lin Ma (Chongqing Special Equipment Inspection and Research Institute, China; Key Laboratory of Electromechanical Equipment Security in Western Complex Environment for State Market Regulation, China), and Huang Song (Chongqing Special Equipment Inspection and Research Institute, China; Key Laboratory of Electromechanical Equipment Security in Western Complex Environment for State Market Regulation, China)</i>	
Application of Artificial Intelligence in Interactive UI Design	113
<i>Sha Liang (Wuhan Polytechnic University, China)</i>	
Research on Carbon-Green Certificate Based Electrical System Operation with Blockchain Technology	119
<i>Lin Cheng (Zhuhai Power Supply Bureau of Guangdong Power Grid Co., Ltd., China), Zhige Liao (Zhuhai Power Supply Bureau of Guangdong Power Grid Co., Ltd., China), Minglei Huang (Zhuhai Power Supply Bureau of Guangdong Power Grid Co., Ltd., China), and Dapeng Wang (Zhuhai Power Supply Bureau of Guangdong Power Grid Co., Ltd., China)</i>	
Application of Artificial Neural Network in Electrical Power System Stability Analysis	124
<i>Busheng Luo (Huizhou Power Supply Bureau of Guangdong Power Grid Co., Ltd., China), Zishun Luo (Guangzhou University, China), and Wenfang Yang (Huizhou Power Supply Bureau of Guangdong Power Grid Co., Ltd., China)</i>	

Research on Neural Network Structure Optimization Under the Framework of Computer Deep Learning	130
<i>Xianqiang Hou (Shandong Institute of Commerce and Technology, China)</i>	
Evaluation and Prediction Algorithm of Students' Comprehensive Quality Based on Big Data and Machine Learning	136
<i>Yuzhu Han (Weifang Engineering Vocational College, China), Shuai Wang (Weifang Engineering Vocational College, China), and Lixia Zhou (Weifang Engineering Vocational College, China)</i>	
Design and Implementation of a Coronary Heart Disease Remote Rehabilitation System Based on Cloud Computing and Deep Learning	142
<i>Zhengyi Yang (The First People's Hospital of Yunnan Province, China), Lizhen Gao (The First People's Hospital of Yunnan Province, China), Ruixia Chen (The First People's Hospital of Yunnan Province, China), and Juan Gao (The First People's Hospital of Yunnan Province, China)</i>	
Behavior Prediction and Management Algorithm of Students in Technical Colleges Based on Deep Reinforcement Learning	147
<i>Sheng Qu (Zibo Technician College, China)</i>	
Research on the Application of AI Intelligence in the Field of Floral Design Under the Environment of Big Data	152
<i>Qianqian Ma (Guangzhou Nanyang Polytechnic College, China)</i>	
A PLC Parameter Self-Tuning Method Based on Particle Swarm Optimization (PSO) Algorithm	157
<i>Yanyan Zhu (Harbin Huade University, China), Yanqiu He (Harbin Institute of Petroleum, China), and Keyuan Li (Harbin Huade University, China)</i>	
New Energy Vehicle Sales Forecasting Based on MICMAC Algorithm and Gray Forecasting Model	163
<i>Jinyi Xie (Guangzhou University, China), Zhongming Cai (Guangzhou University, China), Jiawei Xia (Beijing University of Chemical Technology, China), and Haoyuan Xue (Northeast Petroleum University, China)</i>	
Application of Hybrid Intelligent Optimization Algorithm in Internal Audit Informatization Construction	170
<i>Heling Zhang (Hunan Applied Technology University, China)</i>	
Research on Tightening Torque Values for Bolts of Vibration Damper Base on Simulation Calculation Method	176
<i>Zhao Zhang (China Electric Power Research Insititute, China), Yi Qi (China Electric Power Research Insititute, China), Jian Zhang (China Electric Power Research Insititute, China), and Shengchun Liu (China Electric Power Research Insititute, China)</i>	
Personalized Tourism Education Service Based on Deep Reinforcement Learning and K-Means Clustering	180
<i>Wenya Zhang (Hubei Communications Technical College, China)</i>	
Research on Optimization of Wireless Network Spectrum Allocation Based on Genetic Algorithm	185
<i>Peidong Chen (Zhejiang Gongshang University, China)</i>	

Charging Infrastructure for Electric Vehicles Forecasting: A Study Based on ARIMA Algorithm and OLS Regression Model	191
<i>Haoxin Ma (Qiqihar University, China), Jiaqi Wang (Qiqihar University, China), and Mingkai Zhu (Qiqihar University, China)</i>	
Research on Application of Image Recognition Technology Based on Deep Learning in Intelligent Security Field	196
<i>Lili Duan (Weifang Engineering Vocational College, China), Cui Wang (Weifang Engineering Vocational College, China), and Xiuping Wang (Weifang Engineering Vocational College, China)</i>	
Electric Power System Text Information Mining and Analysis Algorithm Combined with Natural Language Processing	202
<i>Runze Ma (Huadong Engineering Co. Ltd, China), Fei Yang (Huadong Engineering Co. Ltd, China), and Fang Dong (Huadong Engineering Co. Ltd, China)</i>	
Training System of Athletes in Track and Field with Computer Big Data Technology	208
<i>Yongzhang Liang (Wuchang Shouyi University, China)</i>	
Defect Diagnosis and Forecast Technology of Electric Device Based on Artificial Intelligence Algorithm	214
<i>Libin Liang (Tangshan Tobacco Company of Hebei Province, China), Xianghui Chen (Hebei Tobacco Company of China, China), Yaming Dai (Tangshan Tobacco Company of Hebei Province, China), and Hongjuan Hou (Hebei Tobacco Company of China, China)</i>	
Research on Optimization of Online Medical Platform Based on K-Means Clustering Algorithm ...	221
<i>Yang Li (Shanghai University, China)</i>	
Design of Human Resource Data Security and Verification System Based on Improved Genetic Algorithm	226
<i>Xun Ouyang (Human Resources Development Center of the Ministry of Natural Resources, China)</i>	
Research on the Application of Intelligent Speech Recognition and Synthesis Technology in Computer Animation	232
<i>Yufeng He (Mianyang Teachers' College, China)</i>	
Research on Object Grasping System Based on YOLO Algorithm	237
<i>Caixiao Ouyang (Wuhan Vocational College of Software and Engineering, China)</i>	
Application and Optimization of Multi-Camera Environment Awareness Technology in Autonomous Navigation Robot System	242
<i>Mengmeng Zu (China Tobacco Henan Industrial Co., Ltd, China), Jia Jia (Henan Haoce Information Technology Co., Ltd, China), Yuan Wang (Henan Haoce Information Technology Co., Ltd, China), and Weiwei Zeng (New Trend International Logis-Tech Co., Ltd, China)</i>	
Research on High-Precision Filtering Method for Standard Bottle Calibration Pressure Based on Deep Learning Approaches	248
<i>Yu Zhou (Chongqing Special Equipment Testing and Research Institute, China), Song Huang (Chongqing Special Equipment Testing and Research Institute, China), Fei Wang (Chongqing Special Equipment Testing and Research Institute, China), Xuelin Zhang (Chongqing Special Equipment Testing and Research Institute, China), and Yuhu Fang (Chongqing Special Equipment Testing and Research Institute, China)</i>	

Optimization of Polymer Flooding Injection Parameters in Reservoir Tertiary Oil Recovery Stage Based on Fuzzy Control Algorithm	253
<i>Meng Liang (No.4 Operation Area of No.6 Oil Production Plant of Daqing Oilfield Co., Ltd., China)</i>	
Intelligent Design and Development of a Green Ecological Restoration Vessel	258
<i>Yan Chen (Zhixing College of Hubei University, China)</i>	
Application of Digital Twin and Meta-Universe Technology in Museum Exhibition Design	262
<i>Xiaoyan Hao (Chongqing College of Architecture and Technology, China) and Yansu Wang (Chongqing College of Architecture and Technology, China)</i>	
Multi-Dimensional Indexing and Efficient Query Optimization of Property Right Digital Certificate Warehouse Based on Big Data Analysis	266
<i>Yetong Wang (Hainan Vocational University of Science and Technology, China), Kongduo Xing (Hainan Vocational University of Science and Technology, China), and Bing Zheng (Hainan Vocational University of Science and Technology, China)</i>	
Investigating the Influence of Tension String on Conductor Sag in ± 800 kV UHV DC Transmission Lines	272
<i>Yong Luo (Power China Hubei Electric Engineering Corporation, China), Zhengtao Xu (Power China Hubei Electric Engineering Corporation, China), Liming Yi (Power China Hubei Electric Engineering Corporation, China), Xianxu Huang (Power China Hubei Electric Engineering Corporation, China), and Xibo Feng (Power China Hubei Electric Engineering Corporation, China)</i>	
Distributed Ledger Design and Consistency Maintenance Algorithm for Digitalization of Property Rights	278
<i>Yetong Wang (Hainan Vocational University of Science and Technology, China), Kongduo Xing (Hainan Vocational University of Science and Technology, China), and Bing Zheng (Hainan Vocational University of Science and Technology, China)</i>	
Building Equipment Data Processing System Based on BIM and Internet of Things Technology	284
<i>Zhou Yihao (Taizhou Vocational and Technical College, China), Yin Jinlin (Taizhou Vocational and Technical College, China), Cao Sifan (Taizhou Vocational and Technical College, China), Ying Danlei (Taizhou Vocational and Technical College, China), and Chew Boon Cheong (Universiti Teknikal Malaysia Melak, Malaysia)</i>	
The High Error Tolerance Characteristics of Hadoop HDFS and the Deployment Strategy of Hyperfusion Platform	289
<i>Yingwei Liang (CSG Guangdong Power Grid Co., Ltd., China), Taipeng Zhu (CSG Guangdong Power Grid Co., Ltd., China), Chenghui Liu (CSG Guangdong Power Grid Co., Ltd., China), Yue Chen (CSG Guangdong Power Grid Co., Ltd., China), and Yufei Yang (CSG Guangdong Power Grid Co., Ltd., China)</i>	
Digital Modeling Technology for Sea Test Site	295
<i>Ziyang Yu (Dalian Scientific Test and Control Technology Institute, China), Shunqi Jin (Dalian Scientific Test and Control Technology Institute, China), Hongseng Zhang (Dalian Scientific Test and Control Technology Institute, China), and Yubo Wei (Dalian Scientific Test and Control Technology Institute, China)</i>	

Analysis of Hadoop Security Mechanism Based on Kerberos Security Model Optimization	299
<i>Yingwei Liang (CSG Guangdong Power Grid Co., Ltd., China), Taipeng Zhu (CSG Guangdong Power Grid Co., Ltd., China), Chenghui Liu (CSG Guangdong Power Grid Co., Ltd., China), Yue Chen (CSG Guangdong Power Grid Co., Ltd., China), and Yufei Yang (CSG Guangdong Power Grid Co., Ltd., China)</i>	
Research on Big Data Analysis of Low-Voltage Power Grid Blackout Information and Optimization of Traceability Algorithm	305
<i>Bowen Zheng (Yuxi Power Supply Bureau Operation Supervision Center, China), Meng Shen (Yuxi Power Supply Bureau Operation Supervision Center, China), Zhengyu Lu (Yuxi Power Supply Bureau Operation Supervision Center, China), Liang Yi (Yuxi Power Supply Bureau Operation Supervision Center, China), and Na Tang (Yuxi Power Supply Bureau Operation Supervision Center, China)</i>	
Early Warning Algorithm of College Students' Mental Health Based on Distributed Multi-Agent System	310
<i>Ziyu Liu (Weifang Engineering Vocational College, China), Xiaojing Zhao (Weifang Engineering Vocational College, China), Chunmei Liu (Weifang Engineering Vocational College, China), Yu Li (Weifang Engineering Vocational College, China), and Wendi Yin (Weifang Engineering Vocational College, China)</i>	
Simulation of Agricultural Product Price Forecast and Market Analysis Model Based on Time Series Algorithm	316
<i>Lingfang Zhao (Xi'an University of technology, China), Ziyun Ding (Xi'an University of technology, China), Yan Lu (Xi'an University of technology, China), Yihua Wang (Xi'an University of technology, China), and Xingbo Yao (Xi'an University of technology, China)</i>	
Analysis and Prediction of Dynamic Network Evolution Based on Complex Network Models	322
<i>Feng Wang (Zibo Technician College, China)</i>	
Optimized Design of Supercapacitor Parameters Based on Genetic Algorithm	328
<i>Mengyi Xu (China Electric Power Research Institute, China)</i>	
Application of Fast Analysis Algorithm for Power Business Data Based on Voice ASR Technology	333
<i>Hancong Huangfu (China Southern Power Grid, China), Yongcai Wang (China Southern Power Grid, China), Muxu Li (China Southern Power Grid, China), and Zhaoxiong Guan (China Southern Power Grid, China)</i>	
Optimization of Construction Schedule and Resource Allocation Algorithm in Highway Engineering	339
<i>Chaofan Fu (Mingde College of Guizhou University, China) and Xu Wang (Mingde College of Guizhou University, China)</i>	
Optimization of Chemical Project Construction and Installation Process Based on Generative Adversarial Networks	346
<i>Xiaolei Luo (Fushun Vocational and Technical College, China)</i>	
Research on Multi-Objective Optimization Algorithm for Reservoir Numerical Simulation and Optimal Development Scheme	352
<i>Huanhuan Lu (Daqing Oilfield No. 5 Oil Production Plant Geological Research Institute, China)</i>	

Personalized Search Algorithm for E-Commerce Based on Knowledge Map and Collaborative Filtering	358
<i>Qianwen Lv (Fushun Vocational and Technical College, China)</i>	
Design and Implementation of French Teaching Assistant Software Based on Machine Translation Algorithm	364
<i>Yuzi Cui (Xi'an Fanyi University, China)</i>	
Construction of Resource Prediction and Early Warning Model in Intelligent Operation and Maintenance of Data Assets Based on Time Series Analysis	370
<i>Taipeng Zhu (Guangdong Power Grid Company Information Center, China), Yufei Yang (Guangdong Power Grid Company Information Center, China), Yingwei Liang (Guangdong Power Grid Company Information Center, China), and Shaohui Xu (Huizhou Power Supply Bureau of Guangdong Power Grid, China)</i>	
Design of Adaptive Speech Recognition Algorithm for Interpreting Task	374
<i>Yunyun Fu (Guangdong University of Science and Technology, China)</i>	
Identification and Location Algorithm of Fragrant Pear Fruit and Its Application in Automatic Picking System	379
<i>Peng Zhou (Xinjiang University of Science & Technology, China), Bingyu Cao (Xinjiang University of Science & Technology, China), Wei Chen (Xinjiang University of Science & Technology, China), and Huan Wang (Xinjiang University of Science & Technology, China)</i>	
An Improved Multi-Objective Evolutionary Algorithm for Balanced Allocation of Business English Instructional Resources	385
<i>Weihua Kuang (Human Normal University, China; Human University of Information Technology, China) and Xiaoqing Gao (Human Normal University, China)</i>	
Research on Building Quality Optimization Software Based on Building Information Model	391
<i>Xueqin Nie (Binzhou Bincheng District Urbanization Service Center, China)</i>	
Using Big Data and Financial Expense Method to Construct a Dynamic Investment Planning Calculation Model	396
<i>Jianqing Li (State Grid Anhui Economic Research Institute, China), Wenming Pan (State Grid Anhui Electric Power Company, China), Shili Liu (State Grid Anhui Economic Research Institute, China), Haihong Du (State Grid Anhui Electric Power Company, China), and Fan Yang (State Grid Anhui Economic Research Institute, China)</i>	
Research on Supply Chain Financial Credit Risk Assessment Model Based on Data Mining Algorithm	403
<i>Ziqi Wei (Sichuan University of Science & Engineering, China)</i>	
Design and Research of Monitoring System for Displacement and Inclination of Tower Foundation in Poor Geological Conditions Based on Sensor Technology	408
<i>Xiaofeng Ma (State Grid Longnan Power Supply Company, China), Haitao Wang (State Grid Longnan Power Supply Company, China), Peng Gao (State Grid Longnan Power Supply Company, China), Bingzhen Ren (State Grid Longnan Power Supply Company, China), and Mingsheng Tang (State Grid Longnan Power Supply Company, China)</i>	

Research on 3D Image Simulation of Landscape Design Rationality Based on Virtual Reality	414
<i>Xin Song (Beijing City University, China), Bo Zhai (Beijing Zhongsha Architectural Design & Research Institute Co., LTD., China), and Xin Zhang (China Urban Construction Design & Research Institute, China)</i>	
Performance Optimization of Distributed Machine Learning Algorithms Based on Cloud Computing in Big Data Analysis	419
<i>Mengyi Xie (Quanzhou University of Information Engineering, China)</i>	
Identification and Analysis of Reactive Power Flow Distribution Characteristics of Regional Power Grid Based on CIM Data	425
<i>Shaohui Xu (Huizhou Power Supply Bureau of Guangdong Power Grid, China)</i>	
Research on Brand Marketing Data Mining Model Based on Feature Extraction Algorithm	431
<i>Qian Xu (Xinjiang University of Science and Technology, China) and Xiaolian Li (Xinjiang University of Science and Technology, China)</i>	
Abnormal Detection and Repair of Environmental Monitoring Data Based on Generative Adversarial Network and Migration Learning	437
<i>Haochen Guo (Jinan Ecology and Environment Monitoring Center of Shandong Province, China) and Hengmei Shen (Shandong Provincial Eco-environment Monitoring Center, China)</i>	
Construction of Business English Intelligent Dialogue System Based on Transformer Model	443
<i>Lisheng Zhao (Xi'an Fanyi University, China)</i>	
Design of Agricultural Product Price Fluctuation Warning Algorithm Based on Hidden Markov Model	449
<i>Feng Cheng (Hunan University of Science and Technology, China)</i>	
Design and Implementation of Intelligent Fire Detection and Alarm System in Electrical Safety System	455
<i>Xueqi Zhao (Wuhan University of Science and Technology, China)</i>	
Modeling and Optimization of Industrial Engineering Complex System Based on Quantum Computing and Big Data Analysis	460
<i>Shuheng Gu (Nanjing University of Finance and Economics, China; Massey University, New Zealand), Yijiang Liu (Nanjing University of Finance and Economics, China; Massey University, New Zealand), Zihan Gu (Nanjing University of Finance and Economics, China; Massey University, New Zealand), Xinzi Wang (Nanjing University of Finance and Economics, China; Massey University, New Zealand), Jianan Shi (Nanjing University of Finance and Economics, China; Massey University, New Zealand), and Sijin Zhu (Nanjing University of Finance and Economics, China; Massey University, New Zealand)</i>	
Automatic Equipment Status Monitoring and Maintenance Management Based on Fuzzy Logic Decision	466
<i>Yujuan Deng (Quzhou College of Technology, China) and Xiaofeng Xu (Longyou Power Supply Company of State Grid Zhejiang Electric Power Co., LTD., China)</i>	
Material Performance Prediction and Mechanical Structure Optimization Design Algorithm Based on Multi-Source Heterogeneous Data Fusion	472
<i>Rongheng Jiang (Harbin Huade University, China) and Siming Gao (Harbin Huade University, China)</i>	

Construction of Hospital Network Security Intrusion Detection System Based on Big Data Clustering Algorithm	479
<i>Peng Jiang (Wuhan University, China) and Haiyan Qi (Wuhan University, China)</i>	
Abnormal Detection and Intervention of Students' Campus Behavior Based on Spatiotemporal Series Model	486
<i>Ran Li (Bozhou University, China)</i>	
Construction of a Security Framework Model for Medical Information Sharing Based on Distributed Networks	490
<i>Wei Liu (Huazhong University of Science and Technology, China), Wei Li (Huazhong University of Science and Technology, China), Wenjing Huang (Huazhong University of Science and Technology, China), and Yong Gao (Huazhong University of Science and Technology, China)</i>	
Topology Optimization and Flow Control Algorithm of Energy Internet Based on Graph Convolution Network	494
<i>Lisha Ma (Weifang Engineering Vocational College, China)</i>	
Research on Crop Growth Detection and Prediction in Farmland Based on Agricultural Big Data	500
<i>Kai Xiao (Wuhan Railway Vocational College of Technology, China)</i>	
Construction and Optimization of a Tourism Prediction Model Combining Spatiotemporal Characteristics and Complex Network Analysis	506
<i>Qinan Song (Hubei Ecology Polytechnic College, China)</i>	
Design of E-Commerce Personalized Recommendation System Based on Multi-Modal Data Fusion	512
<i>Xiaoyi Yuan (Chongqing College of Architecture and Technology, China)</i>	
Design and Rendering of High Realistic Visual Communication Combining Computer Graphics and Physical Simulation	517
<i>Xi Wang (Guangdong University of Science & Technology, China)</i>	
Design and Optimization of an Artificial Intelligence-Based System for Analyzing Children's Learning Attitudes and Behaviors	522
<i>Jing Chen (Institute of Psychology, China; University of Chinese Academy of Sciences, China) and Yiwen Chen (Institute of Psychology, China; University of Chinese Academy of Sciences, China)</i>	
Flight Attendant Service Demand Prediction and Resource Optimization Algorithm Based on Big Data Analysis	527
<i>Rui Zhang (Weifang Engineering Vocational College, China), Jinting Han (Weifang Engineering Vocational College, China), and Xiaojiao Qu (Weifang Engineering Vocational College, China)</i>	
Image Recognition-Based Detection and Maintenance Optimization Algorithm for Curtain Wall Glass Damage	533
<i>Shun Li (Hunan Technical College of Railway High Speed, China), Li Yang (China Railway Beijing Group Co., Ltd., China), Jianxin Zhang (China Railway Beijing Group Co., Ltd., China), and Yanqiang Lan (China Railway Beijing Group Co., Ltd., China)</i>	

Improvement of Yolov5 Target Detection Algorithm Combined with Multi-Scale Feature Fusion ...	538
<i>Dongyang Chen (Central South University, China), Xiangyong Tan (Central South University, China), Jiaye Lin (Central South University, China), Bo Cui (Changchun Humanities and Sciences College, China), and Ken Chen (Central South University, China)</i>	
Data-Driven Employee Training and Development Path Recommendation System Design and Application	544
<i>Weina Li (State Grid East Inner Mongolia Electric Power Supply Co., Ltd, China) and Yue Ma (State Grid East Inner Mongolia Electric Power Supply Co., Ltd, China)</i>	
Feature Extraction and Defect Identification Algorithm of Water-Cooled Wall Tube Magnetic Flux Leakage Signal Based on Time-Frequency Analysis	549
<i>Tao Chen (Hangzhou Special Equipment Inspection & Science Research Institute, China), Xiangyue Yang (Hangzhou Special Equipment Inspection & Science Research Institute, China), Canhua Jin (Hangzhou Special Equipment Inspection & Science Research Institute, China), Ze Huang (Hangzhou Special Equipment Inspection & Science Research Institute, China), and Yanlei Liu (Hangzhou Special Equipment Inspection & Science Research Institute, China)</i>	
Application and Performance Optimization of Intelligent Control System in Electromechanical Equipment	555
<i>Chengtao Wang (The Testing and Technology Center for Industrial Products of Shenzhen Customs, China)</i>	
Tennis Player Winning Prediction Based on Grid-Search Random Forest Algorithm	560
<i>Zilin Shen (Minzu University of China, China), Jingyu Lei (Minzu University of China, China), and Yunnan You (Minzu University of China, China)</i>	
Development and Application of Data Analysis and Visualization Software in Oil Testing Process	564
<i>Liqiang Wu (CNPC Bohai Drilling Engineering Company Limited, China), Wanxue Jiang (CNPC Bohai Drilling Engineering Company Limited, China), and Zhi Chen (CNPC Bohai Drilling Engineering Company Limited, China)</i>	
Load Characteristics Analysis and Control Strategy of Integrated Smart Energy System Based on Big Data Mining	569
<i>Yan Shi (State Grid East Inner Mongolia Electric Power Co., LTD, China), Yi Zhang (State Grid East Inner Mongolia Electric Power Co., LTD, China), Fengjiu Yang (State Grid East Inner Mongolia Electric Power Co., LTD, China), and Renjie Tong (Nanrui Nanjing Power Technology branch of State Grid, China)</i>	
Research on Transportation Route Planning and Vehicle Scheduling Based on Optimization Algorithm in Cold Chain Logistics	574
<i>Qi Zeng (Guangdong Vocational College of Hotel Management, China)</i>	
Simulation and Optimization of Physical Education Teaching Based on Virtual Reality Technology and Reinforcement Learning Algorithms	579
<i>Meng Sun (Shandong Business Institute, China), Peiquan Li (Shandong Business Institute, China), and Dayu Wang (Shandong Business Institute, China)</i>	

Data-Driven Analysis of Students' Learning Behavior and Construction of Prediction Model	585
<i>Meina Wang (Guangdong Polytechnic of Science and Technology, China)</i>	
Consumer Intention Recognition and Behavior Prediction of Social E-Commerce Users Based on Multimodal Fusion	590
<i>Weiwei Wang (Chengdu College of University of Electronic Science and Technology of China, China) and Xiaoxiao Li (Sichuan University Jinjiang College, China)</i>	
Exploration on the Technology of Automation and Intelligentization of Educational Process with the Aid of Algorithm	595
<i>Yan Zhang (Guangdong Polytechnic of Science and Technology, China)</i>	
Construction of Interactive Construction Progress and Quality Monitoring System Based on Image Processing	601
<i>Wei Wu (Fushun Vocational and Technical College, China)</i>	
Fast Detection Algorithm of Food Nutrients Based on Multi-Feature Information	608
<i>Xinglin Zeng (Jiangsu Vocational College of Tourism, China; Yangzhou University, China), Yanchun Ruan (Jiangsu Vocational College of Tourism, China), Ruichen Bu (Jiangsu Vocational College of Tourism, China), Mei Lin (Jiangsu Vocational College of Tourism, China), and Xudong Peng (Jiangsu Vocational College of Tourism, China)</i>	
Obstacle Detection and Avoidance Algorithm in UAV Patrol Inspection of Transmission Lines Based on Multi-Source Data Fusion and Computer Vision	614
<i>Yunfeng Xia (Hainan Power Grid Transmission & Maintenance Branch Corp., China), Junan Chen (Hainan Power Grid Transmission & Maintenance Branch Corp., China), and Xi Tao (Hainan Power Grid Transmission & Maintenance Branch Corp., China)</i>	
Design and Development of Anti-Occupation System for Charging Piles of New Energy Vehicles Based on Deep Learning	620
<i>Chen Geng (Batangas State University The National Engineering University - Alangilan, Philippines) and Jeffrey S. Sarmiento (Batangas State University The National Engineering University - Alangilan, Philippines)</i>	
Multi Source Data Fusion and Unmanned Aerial Vehicle Real-Time Monitoring Algorithm for Key Sections of Transmission Lines	626
<i>Zhao Zhang (Hainan Power Grid Transmission & Maintenance Branch Corp., China), Yashan Liang (Hainan Power Grid Transmission & Maintenance Branch Corp., China), and Qing Jiang (Hainan Power Grid Transmission & Maintenance Branch Corp., China)</i>	
Unmanned Aerial Vehicle Autonomous Flight Path Planning Algorithm Based on Deep Learning .	632
<i>Shengpeng Li (Aerospace Times Feihong Technology Company Limited, China) and Yuhan Qian (Aerospace Times Feihong Technology Company Limited, China)</i>	
Intelligent Evaluation Model of Physical Education Teaching Effect Combining Multi-Modal Data and Deep Neural Network	638
<i>Miao Zhao (Shandong Business Institute, China), Kun Ge (Shandong Business Institute, China), and Ping Zou (Shandong Business Institute, China)</i>	

Automatic Detection Model of Food Microbial Contamination Combined with Image Processing and Pattern Recognition	644
<i>Wei Wang (Jiangsu Vocational College of Tourism, China; Yangzhou University, China), Yanchun Ruan (Jiangsu Vocational College of Tourism, China), Mei Lin (Jiangsu Vocational College of Tourism, China), and Ruichen Bu (Jiangsu Vocational College of Tourism, China)</i>	
Paper Bag Defect Detection Based on Improved YOLOv5 Algorithm	649
<i>Tianze Cui (Northeastern University, China), Lanxuan Jia (Northeastern University, China), Yuxuan Peng (Northeastern University, China), and Hexue Cai (Northeastern University, China)</i>	
Research and Application of Machine Learning Algorithm in Natural Language Processing and Semantic Understanding	655
<i>Yixian Wang (Central China Normal University, China)</i>	
Collaborative Optimization Model of High-Quality Development and Carbon Emission in Construction Industry Based on Multi-Objective Evolutionary Algorithm	660
<i>Wei Wei (Xi'an Jiaotong University City College, China)</i>	
Study on Design and Optimization of Vibration Reduction of Gas Pipeline Under Earthquake Time Effect Based on Sensor	665
<i>Donghao Zhang (PipeChina Construction Project Management Company, China), Zhaoying Wu (Changchun Institute of Engineering, China), Zhibo Jin (PipeChina Construction Project Management Company, China), and Yu Wu (Beijing Urban Construction Exploration & Surveying Design Research Institute CO., Ltd, China)</i>	
Stability Evaluation and Optimization Algorithm of Transmission and Distribution System Based on Graph Theory and Complex Network Analysis	671
<i>Huang Mu (Danyang power supply branch of State Grid Jiangsu Electric Power Co., Ltd., China), Weiting Rao (Danyang power supply branch of State Grid Jiangsu Electric Power Co., Ltd., China), Yue Zhang (Danyang power supply branch of State Grid Jiangsu Electric Power Co., Ltd., China), Wei Lin (Danyang power supply branch of State Grid Jiangsu Electric Power Co., Ltd., China), Shuyi Lin (Danyang power supply branch of State Grid Jiangsu Electric Power Co., Ltd., China), Hailing Zhao (Danyang power supply branch of State Grid Jiangsu Electric Power Co., Ltd., China), Yuqi Wang (Danyang power supply branch of State Grid Jiangsu Electric Power Co., Ltd., China), Chaohui Li (Danyang power supply branch of State Grid Jiangsu Electric Power Co., Ltd., China), and Cheng Peng (Danyang power supply branch of State Grid Jiangsu Electric Power Co., Ltd., China)</i>	
Design and Implementation of Self-Scanning Code Inventory System in Warehouse Global Scene..	677
<i>Tao Xiong (State Grid Hunan Electric Power Co., Ltd., China), Guohui Zhan (State Grid Hunan Electric Power Co., Ltd., China), Yunqian Peng (State Grid Hunan Electric Power Co., Ltd., China), Siyu Chen (State Grid Hunan Electric Power Co., Ltd., China), and Yang Wu (State Grid Hunan Electric Power Co., Ltd., China)</i>	

Design and Implementation of Matrix Algorithm for Fault Location in Transmission and Distribution Network	683
<i>Yin Sun (Zhenjiang Power Supply Branch of State Grid Jiangsu Electric Power Co. Ltd, China), Junhan Xu (Zhenjiang Power Supply Branch of State Grid Jiangsu Electric Power Co. Ltd, China), and Xiang Zhang (Zhenjiang Power Supply Branch of State Grid Jiangsu Electric Power Co. Ltd, China)</i>	
Dynamic Evolution Modeling and Computer Simulation Analysis in Complex Networks	688
<i>Xu Yu (Heilongjiang University of Finance and Economic, China), Linlin Lv (Heilongjiang University of Finance and Economic, China), and Chunying Ling (Heilongjiang University of Finance and Economic, China)</i>	
Parameter Identification Algorithm of Transmission and Distribution Network Based on Particle Swarm Optimization	694
<i>Liang Wu (Zhenjiang Power Supply Branch of State Grid Jiangsu Electric Power Co. Ltd, China), Yuting Ji (Zhenjiang Power Supply Branch of State Grid Jiangsu Electric Power Co. Ltd, China), Ruoyu Lei (Zhenjiang Power Supply Branch of State Grid Jiangsu Electric Power Co. Ltd, China), Yuhao Pei (Zhenjiang Power Supply Branch of State Grid Jiangsu Electric Power Co. Ltd, China), Junhan Xu (Zhenjiang Power Supply Branch of State Grid Jiangsu Electric Power Co. Ltd, China), and Juehao Xie (Zhenjiang Power Supply Branch of State Grid Jiangsu Electric Power Co. Ltd, China)</i>	
Research on Water Conservancy Project Monitoring and Intelligent Identification Method Based on Computer Vision Technology	700
<i>Jin Zhu (Zhejiang Province Water Conservancy and Hydropower Technology Consultation Center, China) and Feng Yang (Zhejiang Zhongshui Engineering Technology Co., Ltd., China)</i>	
Efficient Rendering Algorithms for Parameterized Modeling and Virtual Interaction in Environmental Design	705
<i>Peng Zhuang (Changchun Humanities and Sciences College, China) and Hongguang Lang (Changchun Humanities and Sciences College, China)</i>	
Application of Security and Privacy Protection Mechanisms in Audio and Video Conference Systems	711
<i>Binlang Li (Digital Business Unit of State Grid Gansu Electric Power Company, China), Xi Song (State Grid Gansu Electric Power Company, China), Wenhui Li (State Grid Gansu Electric Power Company, China), Lidan Wang (Digital Business Unit of State Grid Gansu Electric Power Company, China), and Dou Liu (Digital Business Unit of State Grid Gansu Electric Power Company, China)</i>	
Risk Management and Optimization Algorithm of Industrial and Commercial Enterprise Supply Chain Based on Complex Network	717
<i>Shehui Li (Nanchang Institute of Technology, China)</i>	

Quality Assessment and Improved Algorithm of Audio and Video Conference Based on Deep Learning	724
<i>Wenhui Li (State Grid Gansu Electric Power Company, China), Binlang Li (Digital Business Unit of State Grid Gansu Electric Power Company, China), Xi Song (State Grid Gansu Electric Power Company, China), Yutong Wang (Digital Business Unit of State Grid Gansu Electric Power Company, China), and Xin Xiao (Digital Business Unit of State Grid Gansu Electric Power Company, China)</i>	
The Role of Noise Signal Processing and Feature Extraction in Automotive Fault Diagnosis	730
<i>Yaodong Hao (China Automotive Technology&Research Center Co. Ltd, China) and Daliang Chen (China Automotive Technology&Research Center Co. Ltd, China)</i>	
Optimization of Real-Time Data Transmission and Synchronization Mechanism in Audio and Video Conferencing Systems	736
<i>Xi Song (State Grid Gansu Electric Power Company, China), Wenhui Li (State Grid Gansu Electric Power Company, China), Binlang Li (Digital Business Unit of State Grid Gansu Electric Power Company, China), Xiaowei Cheng (Digital Business Unit of State Grid Gansu Electric Power Company, China), and Chenchen Dou (Digital Business Unit of State Grid Gansu Electric Power Company, China)</i>	
Throughput Prediction of Chongqing Inland Port Based on Time Series Decomposition and Integrated Machine Learning Method	742
<i>Huiying Mei (Shanghai University, China)</i>	
Research and Development of Intelligent Industrial Design Assistant System Based on Generative Adversarial Network	748
<i>Hao Chen (Beijing Information Technology College, China)</i>	
Application and Optimization of Radio Frequency Identification Technology in Power Automation	751
<i>Busheng Luo (Huizhou Power Supply Bureau of Guangdong Power Grid Co., Ltd., China), Zishun Luo (Guangzhou University, China), and Zuogang Zhang (Huizhou Power Supply Bureau of Guangdong Power Grid Co., Ltd., China)</i>	
Information Security Situation Awareness Based on Big Data Technology	757
<i>Chuang Ma (Wuhan Polytechnic, China)</i>	
Ant Colony Optimization Strategy in Distributed Generation Systems	762
<i>Busheng Luo (Huizhou Power Supply Bureau of Guangdong Power Grid Co., Ltd., China), Zishun Luo (Guangzhou University, China), and Deru Guo (Huizhou Power Supply Bureau of Guangdong Power Grid Co., Ltd., China)</i>	
Research on the Application of Virtual Reality and Augmented Reality Technology in Game Picture Generation	768
<i>Yuhong Shi (Beijing Information Technology College, China)</i>	
Optimization of Commodity Recommendation Algorithm Based on Association Rule Mining in E-Commerce	771
<i>Jiayan Yang (Wuhan Donghu University, China) and Caihong Xiang (Wuhan Donghu University, China)</i>	
Research on the Recommendation Algorithm of Cultural and Creative Tourism Service Based on Cloud Computing	776
<i>Ru Huang (Nanning University, China)</i>	

Analysis of the Effect of Physical Education Learning for University Students Based on Data Mining Algorithms	780
<i>Rong Zhu (Shandong Vocational College of Science and Technology, China)</i>	
Research on the Application of Artificial Intelligence in Fault Diagnosis and Management of Communication Networks	786
<i>Xiangyi Wang (China Comservice Wangying Technology Co., Ltd, China)</i>	
Quantum Computing in Music: Complex Pattern Recognition in Piano Music	791
<i>Wei He (Hainan University, China)</i>	
Research on 3D Printing Image Processing and Optimization Algorithm of Polymer Materials	796
<i>Jiali Wang (National University of Singapore, Singapore)</i>	
Optimal Scheduling Algorithm of Distributed Energy Resources in Virtual Power Plant Based on Cloud Computing	802
<i>Peikai Li (Electric Power Dispatching and Control Center Guangxi Power Grid Co., Ltd., China), Lianrong Pan (Electric Power Dispatching and Control Center Guangxi Power Grid Co., Ltd., China), Jiayi Yang (Electric Power Dispatching and Control Center Guangxi Power Grid Co., Ltd., China), Jiaan Li (Laibin Power Supply Bureau of Guangxi Power Grid Co., Ltd, China), and Yuan Fu (Electric Power Dispatching and Control Center Guangxi Power Grid Co., Ltd., China)</i>	
Research on Structure Optimization and Accuracy Improvement of Key Components of Medical Device Robot	809
<i>Qifeng Wang (Tohoku University, Japan) and Yoichi Haga (Tohoku University, Japan)</i>	
Simulation of Rural Ecotourism Suitability Evaluation Model Based on Random Forest Algorithm Under the Background of Rural Revitalization	814
<i>Fengyang Shang (Hubei Communications Technical College, China) and Yisi Wang (Hubei Institute of Water Resources Survey and Design CO., LTD, China)</i>	
Design of Data Application Risk Prediction and Management System Based on Machine Learning Algorithms	819
<i>Shu Wang (State Grid Changzhou Electric Power Supply Company, China), Xiaolin Yang (State Grid Changzhou Electric Power Supply Company, China), and Yun Lu (State Grid Changzhou Electric Power Supply Company, China)</i>	
Security and Attack Prevention in Software-Defined Network	824
<i>Ruixian Ye (Shenzhen Power Supply Bureau Co., Ltd, China), Yuhong Ouyang (Shenzhen Power Supply Bureau Co., Ltd, China), and Xiangbei Che (Shenzhen Power Supply Bureau Co., Ltd, China)</i>	
Automatic Generation Technology of Animated Character Expression and Action Based on Deep Learning	829
<i>Peng Li (Beijing Information Technology College, China)</i>	
Research and Application of Real-Time Monitoring and Teaching Feedback System of Sports Action Based on Machine Vision Algorithm	832
<i>Ning Dong (Guangdong Innovative Technical College, China)</i>	

Decision Support Algorithm for Fine Parameter Adjustment of Oil Production Wells in Oilfield Combining Big Data Analysis and Reinforcement Learning	838
<i>Lu Jiang (Technical Management Office of the Second Operation Area of the Fourth Oil Production Plant Of Daqing Oilfield, China)</i>	
Modeling and Numerical Simulation Analysis of Financial Risk Model Based on Stochastic Differential Equation	843
<i>Jiixin Wang (Beijing Polytechnic, China)</i>	
Research on Emotion Recognition Model Construction and Emotion Regulation Technology Based on Machine Learning Algorithm	850
<i>Haixia Liu (Shandong Business Institute, China), Xin Huang (Shandong Business Institute, China), and Naili Xu (Shandong Business Institute, China)</i>	
Employment Prediction and Trend Analysis of Higher Vocational College Students Based on Data Mining Algorithm	855
<i>Yuting Sun (Weifang Engineering Vocational College, China), Junming Fu (Weifang Engineering Vocational College, China), Nan Shan (Weifang Engineering Vocational College, China), and Xiaolan Sun (Weifang Engineering Vocational College, China)</i>	
Sentiment Analysis of Translated Texts Combined with Artificial Intelligence and Improvement of Machine Translation	861
<i>Jia Chen (Sichuan University of Media and Communications, China)</i>	
Design of Personnel Location Algorithm in Complex Environment with Multi-Modal Sensor Data Fusion	867
<i>Feng He (Yunnan University of Finance and Economics, China) and Lu Zhao (Yunnan Provincial Fire and Rescue Headquarters, China)</i>	
Design and Implementation of a Disaster Emergency Rescue System Based on Remote Sensing Image Target Detection Algorithm	874
<i>Feng He (Yunnan University of Finance and Economics, China), Jiangcheng Li (Yunnan University of Finance and Economics, China), and Yang Liu (Yunnan University of Finance and Economics, China)</i>	
Construction of Spatial Location and Tracking Model of Mixed Reality Based on SLAM Algorithm	880
<i>Xuelian Mu (Weifang Engineering Vocational College, China), Shanshan Lin (Weifang Engineering Vocational College, China), and Ruiwei Duan (Weifang Engineering Vocational College, China)</i>	
Real Time Data Fusion and Intelligent Decision-Making Algorithm for Low-Voltage Distribution Network Based on Cloud Edge Collaboration	885
<i>Yu Zhang (Guangzhou Power Supply Bureau, Guangdong Power Grid Co., Ltd., China), Renjie Deng (Guangzhou Power Supply Bureau, Guangdong Power Grid Co., Ltd., China), and Shanshan Yu (Guangzhou Power Supply Bureau, Guangdong Power Grid Co., Ltd., China)</i>	
Research on the Application of Machine Learning Algorithm in Artificial Intelligence Product Recommendation System	891
<i>Yuchen Lai (University of California, USA)</i>	
Optimization Algorithm of Green Building Landscape Space Environment Based on Geographic Information System	897
<i>Hongying Wang (Hubei University of Technology, China) and Wen Wang (Hubei University of Technology, China)</i>	

Research on the Best Decision Model of Administrative Management Based on SOA Architecture..	902
<i>Fengcai Qin (Nanning University, China) and Chun Jiang (Nanning University, China)</i>	
Research on Financial Credit Risk Simulation Based on Rough Set Theory	906
<i>Chenxi Jiang (Xiangnan University, China) and Yiheng Luo (Xiangnan University, China)</i>	
Prediction Algorithm of Regional Economic Development Based on Rough Set	910
<i>Xiaoli Huang (Jiangxi University of Applied Science, China)</i>	
Intelligent Analysis of Start-up Characteristics and Heat Transfer Performance of Plate Pulsating Heat Pipe Based on Data Fusion	915
<i>Chenxin Ouyang (Changsha University of Science & Technology, China) and Guowei Xiahou (Changsha University of Science & Technology, China)</i>	
Real-Time Climate Monitoring and Disaster Early Warning Algorithm Based on Sensor Network and Cloud Computing	921
<i>Ren Cai (Urumqi Meteorological Bureau, China) and Chaocheng Su (Urumqi Meteorological Bureau, China)</i>	
Monitoring the Growth Characteristics of Organic Dry Cereal Cultivation by Ground Cover Based on Hyperspectral Techniques	927
<i>Haifeng Gao (Loliang Science and Technology Innovation Development Service Center, China), Zeping Gu (Loliang Science and Technology Innovation Development Service Center, China), and Yanqin Liu (Loliang Science and Technology Innovation Development Service Center, China)</i>	
Design of a Smart Shipping Risk Prediction and Early Warning System Based on Big Data Technology	933
<i>Yihe Zhao (Shanghai Maritime University, China)</i>	
Application of 3D Digital Power Grid Model Implemented using Deep Learning and Point Cloud Data in Intelligent Inspection	939
<i>Zhong Ren (National Nuclear Power Planning and Design Institute Co., Ltd., China), Bing Xiao (National Nuclear Power Planning and Design Institute Co., Ltd., China), and Zaibao Xiong (National Nuclear Power Planning and Design Institute Co., Ltd., China)</i>	
Application of Multi-Objective Optimization Algorithm in Joint Operation of Sluice Groups	945
<i>Taiwu Chen (Lianyungang Linhong Water Conservancy Project Management Office, China), Zhifu Pan (Lianyungang Urban Water Engineering Management Office, China), Guanzhong Xu (Guanyun County Dovetail Gate Management, China), Chen Peng (Lianyungang Urban Water Engineering Management Office, China), and Erjun Liu (Lianyungang Urban Water Engineering Management Office, China)</i>	
Distribution Network Fault Prediction and Accurate Load Regulation Optimization Algorithm Based on Deep Learning	952
<i>Wendong Huang (Guangzhou Power Supply Bureau, Guangdong Power Grid Co., Ltd., China), Yu Zhang (Guangzhou Power Supply Bureau, Guangdong Power Grid Co., Ltd., China), and Qiuhui Zhang (Guangzhou Power Supply Bureau, Guangdong Power Grid Co., Ltd., China)</i>	

Prediction and Compensation Techniques for Depth Image Errors in Multi View Video Compression	958
<i>Wenmin Wang (China Mobile Online Service Co., Ltd., China), Chunya Li (China Mobile Online Service Co., Ltd., China), Shenghui Li (China Mobile Online Service Co., Ltd., China), Ming Cheng (China Mobile Online Service Co., Ltd., China), and Yue Wang (China Mobile Online Service Co., Ltd., China)</i>	
Research on Zero Power Communication Network Transmission Technology for Fusion Perception Signals in Buried Environments	964
<i>Xiaoyi Zhang (Beijing Zhixin Microelectronics Technology Co., Ltd, China), Fuhua Liu (Beijing Zhixin Microelectronics Technology Co., Ltd, China), Cheng Zhen (Beijing Zhixin Microelectronics Technology Co., Ltd, China), Jianhua Lu (Beijing Zhixin Microelectronics Technology Co., Ltd, China), and Ma Yan (Beijing Zhixin Microelectronics Technology Co., Ltd, China)</i>	
Application of Multimodal Data Fusion in Panoramic Monitoring and Intelligent Inspection of Power Distribution Network	969
<i>Hongzhi Lu (Guangzhou Power Supply Bureau, Guangdong Power Grid Co., Ltd., China), Jiaqi Zhang (Guangzhou Power Supply Bureau, Guangdong Power Grid Co., Ltd., China), Huan Chen (Guangzhou Power Supply Bureau, Guangdong Power Grid Co., Ltd., China), and Runtao Qiu (Guangzhou Power Supply Bureau, Guangdong Power Grid Co., Ltd., China)</i>	
Image Feature Extraction and Tracking for Robot Vision Servo Control System Based on the Transformer Model	975
<i>Yanqiu He (Harbin Institute of Petroleum, China), Yanyan Zhu (Harbin Huade University, China), and Haisheng Liu (The Seventh School of Harbin New District, China)</i>	
Cross-Scene Visualization of Laser Point Cloud Data in Transmission Line Corridors	980
<i>Peng Li (Hainan Power Grid Transmission&Maintenance Branch Corp, China), Junan Chen (Hainan Power Grid Transmission&Maintenance Branch Corp, China), Qishua Liang (Hainan Power Grid Transmission&Maintenance Branch Corp, China), Xi Tao (Hainan Power Grid Transmission&Maintenance Branch Corp, China), and Yeming Lai (Hainan Power Grid Transmission&Maintenance Branch Corp, China)</i>	
Research on Energy Management and Optimization Algorithm Based on Artificial Intelligence in Energy-Saving Buildings	985
<i>Jing Liu (Harbin Huade University, China) and Yu He (Harbin Huade University, China)</i>	
A Multi-Dimensional Dynamic Monitoring and Early Warning Algorithm for Power Grid Project Reserves Based on Spatio-Temporal Data Mining	991
<i>Meifang Ma (State Grid Xinjiang Information and Communication Company, China), Liu Yang (State Grid Xinjiang Information and Communication Company, China), Le Wei (State Grid Xinjiang Information and Communication Company, China), Tao Wang (State Grid Xinjiang Information and Communication Company, China), and Jiangtao Guo (State Grid Xinjiang Information and Communication Company, China)</i>	

Simulation of Multi-Objective Optimization Planning Algorithm for Low-Voltage Power Distribution Network Under High Penetration of New Energy	996
<i>Dehui Wang (Guangzhou Power Supply Bureau, Guangdong Power Grid Co., Ltd., China), Hongzhi Lu (Guangzhou Power Supply Bureau, Guangdong Power Grid Co., Ltd., China), Xinhang Zhou (Guangzhou Power Supply Bureau, Guangdong Power Grid Co., Ltd., China), and Shaoyuan Gu (Guangzhou Power Supply Bureau, Guangdong Power Grid Co., Ltd., China)</i>	
Study on the Simulation Method for Track Fault Diagnosis of Mechanical Parking Equipment	1003
<i>Teng Wang (Shanghai Institute of Technology, China), Bin Xu (Shanghai Institute of Technology, China), Xudong Ge (Shanghai Institute of Technology, China), and Zhengxin Gao (Shanghai Institute of Technology, China)</i>	
Application of Cross Border E-Commerce Platform Data Mining Algorithms in Digital Finance Risk Control	1011
<i>Caihong Xiang (Wuhan Donghu University, China) and Jiayan Yang (Wuhan Donghu University, China)</i>	
Resilience Enhancement and Multi-Objective Planning Algorithm for Distribution Networks Under High Penetration Distributed Power Sources	1017
<i>Zhuojia Xu (Guangzhou Power Supply Bureau, Guangdong Power Grid Co., Ltd., China), Yu Zhang (Guangzhou Power Supply Bureau, Guangdong Power Grid Co., Ltd., China), and Linghan Xu (Guangzhou Power Supply Bureau, Guangdong Power Grid Co., Ltd., China)</i>	
Remote Inspection State Prediction Method for Visualization of Overhead Transmission Line Channel State	1023
<i>Jie Yang (Hainan Power Grid Transmission&Maintenance Branch Corp, China), Junan Chen (Hainan Power Grid Transmission&Maintenance Branch Corp, China), Qishuai Liang (Hainan Power Grid Transmission&Maintenance Branch Corp, China), Sheng Ye (Hainan Power Grid Transmission&Maintenance Branch Corp, China), and Yeming Lai (Hainan Power Grid Transmission&Maintenance Branch Corp, China)</i>	
Exploration of Algorithm-Based Character Motion and Expression Naturalization Technology in Animation Design	1028
<i>Aihua Zhang (Hubei University of Technology, China) and Yufei Li (Hubei University of Technology, China)</i>	
Safety Management System of Water Conservancy Project Construction Site Based on Internet of Things Technology	1034
<i>Yangshen Zhang (Cihuai Xinhe River Engineering Administration of Anhui Province, China)</i>	
Research on the Practical Application of RFID Technology in Enterprise Internal Document Management System	1040
<i>Shufeng Zhang (Suzhou Industrial Park Institute of Service Outsourcing, China), Tianjiao Yang (Suzhou Industrial Park Institute of Service Outsourcing, China), and Hui Xia (Shenyang Normal University, China)</i>	

Author Index