2021 2nd International Conference on Big Data & Artificial Intelligence & Software Engineering (ICBASE 2021)

Zhuhai, China 24 – 26 September 2021



IEEE Catalog Number: CFP21Y95-POD ISBN: 978-1-6654-2710-4

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:
 CFP21Y95-POD

 ISBN (Print-On-Demand):
 978-1-6654-2710-4

 ISBN (Online):
 978-1-6654-2709-8

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



2021 2nd International Conference on Big Data & Artificial Intelligence & Software Engineering (ICBASE)

ICBASE 2021

Table of Contents

Preface	
Committee Members Reviewers	
Big Data Mining Analysis and Algorithm Model Application	
Special Steel Production Under Carbon Emission Constraints by Big Data	1
An Exploration of Live e-Commerce Paths from an Algorithmic Research Perspective	7
Research on Predicting Heart Attack Through Active Learning	12
Research on Distinguishing Different State of Levitated Water Droplet Based on CNN Algorithm Yiheng Chen (University College London, UK)	19
UAV Detection Based on Improved YOLOv4 Object Detection Model Run Niu (Engineering University of PAP, China), Yi Qu (Engineering University of PAP, China), and Zhe Wang (National University of Defense Technology, China)	25
FLBID: An Income Distribution Mothed Based on Bargaining for Participants in Federated Learning	30
Analysis of Big Data and Cloud Computing Technology Based on the Library Lending System . Xia Zhan (Nanchang Vocational University, China)	34
Recurrent Neural Networks Algorithms and Applications	38

Path Planning of Manipulator Based on Improved RRT-Connect Algorithm Ying Zhu (Guangzhou Huali College, China), Yanfeng Tang (Guangzhou Huali College, China), Yawan Zhang (Guangzhou Huali College, China), and Yujun Huang (Guangzhou Huali College, China)	. 44
Research on the Housing Rent to Purchase Ratio Index Compilation Based on Internet Big Data Taking Beijing and Tianjin as Examples Yang Xin (Institute of Financial Research, Yunnan University of Finance and Economics), Yang Gao (Institute of Financial Research, Yunnan University of Finance and Economics), and Yinning He (Yunnan University of Finance and Economics)	48
Research on ant Colony Optimization Network Access Algorithm Based on Model of Vehicle fog Calculation	. 52
Simulation of Precipitation in 40 Alpha World Cities for the 20th Century by Means of Random Walk Shaomin Yan (National Engineering Research Center for Non-Food Biorefinery, State Key Laboratory of Non-Food Biomass and Enzyme Technology, Guangxi Biomass Engineering Technology Research Center, Guangxi Key Laboratory of Biorefinery, Guangxi Academy of Sciences, China) and Guang Wu (National Engineering Research Center for Non-Food Biorefinery, State Key Laboratory of Non-Food Biomass and Enzyme Technology, Guangxi Biomass Engineering Technology Research Center, Guangxi Key Laboratory of Biorefinery, Guangxi Academy of Sciences, China)	. 56
Evaluation Models for Luminous Environment Satisfaction in Green Office Buildings Integrating Environmental and Spatial Attributes Based on Massive Data Samples Liang Ji (Shanghai Research Institute of Building Sciences Co., Ltd., China), Mengkun Hu (Shanghai Research Institute of Building Sciences Co., Ltd., China), Lina Zhang (Shanghai Research Institute of Building Sciences Co., Ltd., China), and Yuncan Sun (Shanghai Research Institute of Building Sciences Co., Ltd., China)	. 62
Numerical Simulation of Scour Effect on Different Types of Piers	. 70
Analysis of The Coordinated Development of Water Resources and Social Economy in Jinhua City Based on the GRA- Mathematical Statistical Analysis Model Yaolan Zhang (Zhejiang Design Institute of Water Conservancy and Hydro-electric Power, China) and Haoyang Feng (Hohai University, China)	. 76
Application of Grid and Entropy Weight-TOPSIS Model in Collision Risk Assessment Caused by Environmental Factors in Port Waters	. 82

Spatial Differentiation of sea Surface Salinity in the South China Sea and the Adjacent Northwest Pacific Based on Big Data Analysis	89
Xin Wang (Shanghai Normal University, China), Jiancheng Kang (Shanghai Normal University, China), Li Zhou (Shanghai Normal University, China), Xiangchun Meng (Shanghai Normal University, China), Yutong Hua	07
(Shanghai Normal University, China), and Zhiwei Chen (Shanghai Normal University, China)	
Numerical Simulation Analyzes the Environmental Impact of the Reclamation Project on the Nearby Sea Area Tianhang Zou (Department of Zhejiang Ocean University, China), Wenbin Yin (Department of Zhejiang Ocean University, China), and Manchan Yu	96
Yin (Department of Zhejiang Ocean University, China), and Menghan Yu (Department of Zhejiang Ocean University, China)	
Research on Reconstruction of Underpass Expressway Bridge Through Data Analysis and Simulation	101
Consulting Co., Ltd., China) and Dengfeng Chen (Yunnan Provincial Highway Engineering Supervision Consulting Co., Ltd., China)	
Construction and Research of Virtual Forest Environment Based on Spatial Data	. 108
Numerical Simulation Analysis of the Construction Process of a Large-Span Variable-Section Tunnel	110
Xudong Jiang (Xi'an University of Architecture and Technology, China), Runke Huo (Xi'an University of Architecture and Technology, China), Shuguang Li (Xi'an University of Architecture and Technology, China), Wei Li (China Academy of Railway Sciences Corporation Limited, China), Xiaoge Li (China Railway 20 Bureau Group Co., Ltd., China), and Xingzhi Yang (China Railway 20 Bureau Group Co., Ltd., China)	. 112
Unsupervised Detection Algorithm of Concrete Bridge Cracks in Complex Environment Based On	
Digital Image	,, 116
Research on Personalized Learning Route Model Based on Improved Collaborative Filtering	120
Algorithm	. 120
Tracking and Detecting Network Traffic Based on Capacity Data Prediction	124
Acquisition Functions in Bayesian Optimization Weiao Gan (University of Glasgow, United Kingdom), Ziyuan Ji (Beijing Normal University-Hong Kong Baptist University, China), and Yongqing Liang (The University of Hong Kong, China)	129
Research on Economic Value Evaluation of Data Analysis	. 136

Application of Improved DBSCAN Clustering Method in Point Cloud Data Segmentation Chunxiao Wang (Hainan Geometics Centery, China), Xiaoqing Xiong (Hainan Geometics Center, China), Houqun Yang (Hainan University, China), Xiaojuan Liu (Hainan Geometics Center, China), Lu Liu (Hainan Geometics Center, China), and Shihao Sun (Hainan Geometics Center, China)	140
An Ensemble Learning Approach of Multi-Model for Classifying House Damage	145
The Performance of Different Algorithms to Solve Traveling Salesman Problem	153
COVID-19 Face Mask Restoration using Pix2pix Model	157
Preliminary Discussion on Production Scheduling Optimization of Garment Intelligent Manufacturing System Based on Big Data	162
Research on Chemical Reaction Prediction Model Based on Fairseq	167
An Auxiliary Tool for Preliminary Tests of Skin Cancer: A Self-Modifying Meta-Learning Method for Clean and Noisy Data	172
Transfer Learning Performance Analysis for VGG16 in Hurricane Damage Building Classification	177
Detection Algorithm of Pulmonary Nodules Based on Deep Learning	185
Cloud Resource Prediction Model Based on LSTM and RBF	189
The Choice of Kernel Function for One-Class Support Vector Machine Jiaoyang Li (University of Toronto, Canada), Lingfeng Zuo (Guangdong Country Garden School, China), Tianyu Su (Beijing new oriental foreign language school, China), and Zihan Guo (Shenzhen College of International Education, China)	195

A Task Schedule Approach for Heterogeneous Storm Based on Particle Swarm-Load Balancing Algorithm	199
A Terminal Homing Control Method of Parafoil Based on Deep Neural Network Anmin Liu (National University of Defense Technology, China), Zhiwei Feng (National University of Defense Technology, China), Qingbin Zhang (National University of Defense Technology, China), and Guobin Zhang (National University of Defense Technology, China)	203
The Comparison of Some Algorithm Based on Ceemdan	210
Research on the Classification of the Paintings of 10 Impressionist Painters Through Deep Learning	218
A Discriminative Graph Neural Network for Fake News Detection Honghao Cao (Huazhong University of Science and Technology, China), Junhao Deng (University of Massachusetts-Amherst, United States), Guoxuan Dong (University of Wisconsin-Madison, United States), and Dewei Yuan (YK Pao School, China)	. 224
A Differential Privacy Preserving Algorithm for Greedy Decision Tree Shudan Yang (Strategic Support Force Information Engineering University, China), Nan Li (Strategic Support Force Information Engineering University, China), Daozhu Sun (Strategic Support Force Information Engineering University, China), Qiming Du (Strategic Support Force Information Engineering University, China), and Wenfu Liu (Strategic Support Force Information Engineering University, China)	229
MTMS: A Fact-Corrected Summarization Model Based on Multitask Learning and Multimodal Fusion	. 238
A New Radiation Source Identification Algorithm	248
General Pacman AI: Game Agent With Tree Search, Adversarial Search And Model-Based RL Algorithms	253

Transmission Line Safety Early Warning Technology Based on Multi-Source Data Perception 2 Tuo Shen (State Grid Baicheng Electric Power Supply Company, China), Xiaolong Liang (State Grid Baicheng Electric Power Supply Company, China), Bao Zhang (State Grid Baicheng Electric Power Supply Company, China), Guang Yang (State Grid Baicheng Electric Power Supply Company, China), Dongye Li (State Grid Baicheng Electric Power Supply Company, China), Jiwen Zu (State Grid Baicheng Electric Power Supply Company, China), and Sihang Pan (State Grid Baicheng Electric Power Supply Company, China)	261
A Bootstrapped Transfer Learning Model Based on ResNet50 and Xception to Classify Buildings Post Hurricane	265
Quantum Walk Based Quantum Secret Sharing in a Verifiable Framework	271
Revenue-Aware Edge Server Deployment Algorithm in Edge Computing Bing Fan (North China Electric Power University, China) and Youdan Shi (North China Electric Power University, China)	277
Seepage and Stability Analysis of Landslide of Transmission Tower Foundation Based on MIDAS Simulation	281
Research on Prediction of Tower Mechanical Response in wind Field Based on Multi-Layer Perceptron	285
Research on Fire Risk Coupling of Petrochemical Enterprises Based on Improved N-K Model 2 Qingqing Lv (Zhejiang Ocean University, China), Haomiao Ning (Zhejiang Ocean University, China), Kezhen Chen (Zhejiang Ocean University, China), and Jihong Ye (Zhejiang Ocean University, China)	290

Wellhead Assignment Model and Improved Hungarian Algorithm for Large Scale Cluster Well
Group
Shi (China University of Petroleum (East China), China), Xuan Chen
(China University of Petroleum (East China), China), Guanghao Shao
(China University of Petroleum (East China), China), Di Chang (China
University of Petroleum (East China), China), and Wensheng Zhang
(China University of Petroleum (East China), China)
Study on Driving Forces of Agricultural Development in the Zuli River Basin Based on Multiple Regression and Path Analysis
Simulating Non-Darcy flow by Integrating Forchheimer Equation with LPF Package of MODFLOW 304
Linxian Huang (University of Jinan, China), Hongqian Chen (Institute
of Geological Engineering Survey of Lunan, China), Yong Qian (Key
Laboratory of Groundwater Remediation of Hebei Province and China
Geological Survey, China; Institute of Hydrogeology and Environmental
Geology, Chinese Academy of Geological Sciences, China), Guoqing Sang
(University of Jinan, China), Liting Xing (University of Jinan,
China), Henghua Zhu (Shandong Institute of Geological Survey, China),
Hao Liang (Land and Space Ecological Restoration Center of Shandong
Province, China), and Hao Xu (China University of Geosciences, China)
Finite Element Analysis of Stress Transfer of Circular end Concrete Filled Steel Tubular Short Columns Under Different Loading Conditions
Bing Li (Shenyang Jianzhu University, China) and Jin Xie (Shenyang Jianzhu University, China)
Finite Element Analysis and Application of the Concrete Under Anchor
Monitoring and Finite Element Analysis of Deep Horizontal Displacement of Foundation pit
Enclosure Pile of a Subway Transfer Station During Construction
China), and Yafeng Liu (Shenyang Jianzhu University, China)
Animal Face Classification Based on Deep Learning
Jiawei Zou (Nanjing University of Posts and Telecommunications, China)
Artificial Intelligence and Computer Image Signal Recognition
An Adaptive Learning-Based Weakly Supervised Object Detection via Context Awareness 331 Xiaoran Zeng (Shanghai Jiao Tong University, China), Zhenhua Li (Shanghai Jiao Tong University, China), and Weidong Zhang (Shanghai Jiao Tong University, China)

Construction of co-Occurrence Relationship Between Pedestrians Based on Smart Face Capture Cameras' Data	336
Shiqi Qu (South China Normal University, China), Yuning Liu (South China Normal University, China), and Bingbing Fan (South China Normal University, China)	
A Research of Object Detection on UAVs Aerial Images	342
Analysis of Spatial-Temporal Variation Characteristics of Vegetation in the Yellow River Source Region from 1982 to 2019 Siqi Gao (Northwest University, China; Yellow River Institute of Hydraulic Research, China), Jun Liu (Ningxia-Inner Mongolia Hydrology and Water Resources Bureau, China), Guotao Dong (Yellow River Institute of Hydraulic Research, China; Heihe Water Resources and Ecological Protection Research Center, China), Xiaohui Jiang (Northwest University, China), Huijuan Yin (Yellow River Institute of Hydraulic Research, China), Yuxin Lei (Northwest University, China), and Tong Nie (Northwest University, China; Yellow River Institute of Hydraulic Research, China)	346
Dynamic Change of Water Surface Area in Baiyangdian by MNDWI	351
Time Series Simulation Method of Meteorological Elements Based on ARIMA Model	358
Research on Flood Level Forecasting in Tidal River Based on Mixture Regressive Model Lijie Shan (Zhejiang Design Institute of Water Conservancy and Hydroelectric Power, China), Bin Tang (Zhejiang Design Institute of Water Conservancy and Hydroelectric Power, China), Yaolan Zhang (Zhejiang Design Institute of Water Conservancy and Hydroelectric Power, China), and Huan Zhou (Zhejiang Design Institute of Water Conservancy and Hydroelectric Power, China)	363
Analysis of Influences of Height-Span Ratios Variations on Earth Pressure for High Filled Cut-and-Cover Tunnel Based on the PFC^2D	372
Face Generation using DCGAN for Low Computing Resources Weichen Liu (Guangdong University of Technology, China), Yuxuan Gu (The University of Melbourne, China), and Kenan Zhang (Central University for Nationalities, China)	377

Imageological Examination of Pulmonary Nodule Detection
Research on Cable Defect Recognition Technology Based on Image Contour Detection
Security Verification Method of Embedded Operating System Semaphore Mechanism Based on Coq 392 Xi Chen (Beijing Institute of Control Engineering, China), Lei Qiao (Beijing Institute of Control Engineering, China), Hongbiao Liu (Xidian University, China), Zhi Ma (Beijing Institute of Control Engineering, China), and Jingjing Jiang (Beijing Institute of Control Engineering, China)
A Semantic Segmentation Method for Remote Sensing Images Based on Deeplab v3
Robustness Analysis for VGG-16 Model in Image Classification of Post-Hurricane Buildings 401 Haoyang Li (Chengdu University of Technology, China) and Xinyi Wang (Tianjin Normal University, China)
Prediction of Electricity Consumption Based on the Combination of LSTM and LassoLars
The AlexNet, LeNet-5 and VGG NET Applied to CIFAR-10
EMG-Based Gesture Recognition System and Its Hardware Implementation

A Game-Theoretic Approach to Understand Transaction Mode Selection in Electric Markets: an Evolutionary Multi-Agent Artificial Intelligent Based Algorithm	429
Speech Generation by Generative Adversarial Network Yijia Chen (Australian National University, Australia)	435
Tibetan lip Reading Based on D3D	439
Verification Code Recognition Based On Active Learning And Convolutional Neural Network 4 Xingqi Chen (Institute of Software, Jilin University, China)	443
Trajectory Prediction of UAV Based on LSTM	448
Application of Ensemble Network Architecture Based on Convolutional Neural Network in Image Classification	452
Handwriting Recognition Based on Resnet-18 Xiaoran Chi (University of Jinan, China), Shuqi Huang (Tianjin University, China), and Jiayu Li (China University of Mining & Technology Beijing, China)	4 56
Face Aging using Generative Adversarial Networks	460
Different CNNs for Enhancing Post-Hurricane Damage Classification	467

Segmentation and Classification: Application of Fully Convolutional Networks and Densely Connected Networks in Melanoma Detection	471
Comparison and Analysis of Two Cartoon Face Recognition	478
Variants and Applications of Generative Adversarial Networks	. 483
Handwriting Image Recognition Based on a GAN Model	. 487
Detecting Post Hurricane House Damage using Geographic Information Related Multi-Resource Classification Model	. 492
Possible Usage of Computer Vision Technology for Ceramic Quality Check	. 502
Energy-Efficient UAV Communication With Trajectory Optimization Jianan Yang (Australian National University, Australia), Jiajun Chen (Arizona State University, China), and Zelong Yang (Hubei University of Education, China)	508
Damage Analysis on Post-Hurricane Images Taken by Satellite Based on Multiple Variants of Convolutional Neural Networks	515
Application of Active Learning in Face Liveness Detection	. 519
Application of Satellite Image in Disaster Detection	. 524
Entrance Guard System Recognition Based on Face Block Feature Point Fusion	530
Review on Generative Adversarial Network in Computer Vision: Methods and Metrics	. 535
HierVAE++: An Update of Hierarchical Generation of Molecular Graphs using Structural Motifs	. 543

Dongsheng Xu (National University of Defense Technology, China), Peng Qiao (National University of Defense Technology, China), and Yong Dou (National University of Defense Technology, China)	547
BIIR: Blind Inpainting Based Image Reconstructon for Texture Defect Detection	552
Application of Artificial Intelligence in Water Conservancy Project Management	556
Active Learning for Language Identification with N-Gram Technique	560
Throw Signals Analysis of Hydropower Unit Based on Complementary Ensemble Empiric Decomposition Yu He (Wuhan University of Technology, China), Xianglian Xu (Wuhan University of Technology, China), Xiaobei Yin (Wuhan University of Technology, China), and Yating Chang (Wuhan University of Technology, China) China)	
Research on the Application of Artificial Intelligence in Taekwondo Sport	571
Application of Artificial Intelligence in Large-Scale International Wushu (Taolu) Events Yi Ke (Wuhan Business University, China)	575
Intelligent Software Development and Intelligent Platform Management IT Design and Development of Multilingual Terminology Resource Management Platform Muheyat Niyazbek (Key Laboratory of Multilingual Information Technology, China; Xinjiang University, China), Kuenssaule Talp (Xinjiang Medical University, China), and Jing Sun (Key Laboratory of Multilingual Information Technology, China; Xinjiang University,	ı 579

Research on Sharing and Application of 3D Design in Construction Site	587
Chunguang Ren (Economic and Electrical Research Institute of Shanxi	
Electrical Power Company of SGCC, China), Kai Xue (Economic and	
Electrical Research Institute of Shanxi Electrical Power Company of	
SGCC, China), Xiaoyang Dong (Economic and Electrical Research	
Institute of Shanxi Electrical Power Company of SGCC, China), Chao Xue	
(Economic and Electrical Research Institute of Shanxi Electrical Power	
Company of SGCC, China), Lixing Ma (Economic and Electrical Research	
Institute of Shanxi Electrical Power Company of SGCC, China), Shuai	
Zhang (Economic and Electrical Research Institute of Shanxi Electrical	
Power Company of SGCC, China), and Tianming Guo (Economic and	
Electrical Research Institute of Shanxi Electrical Power Company of SGCC, China)	
An Empirical Study of UAV's Delivery Path Planning	591
Junsen Liao (University of Minnesota, U.S.)	
Research and Development of Real Estate Information Registration Platform Based on WebGIS Xiaoli Shan (Weifang Engineering Vocational College, China), Chengxia Zhang (Weifang Engineering Vocational College, China), Mingyu Dong (Qingzhou Natural Resources and Planning Bureaut, China), and Xia Jie (Weifang Hanting Xiafei Road Primary School, China)	597
The Comparison Between Conditional Generative Adversarial Nets and Deep Convolutional Generative Adversarial Network, and its GUI-Related Application	601
Research on the Application of Virtual Reality Technology in English Classroom	610
Deep Learning for Unsupervised Neural Machine Translation	614
An Environmental Engineering EED Based Qualitative & Quantitative Analysis SEM Modelling: QCA - Corpus Simulation & Optimization	618
Yucong You (Guangzhou College of Business and Technology) and Luxia Yi (Guangzhou College of Business and Technology)	
A Corpus-Based Study on Chemical Trade Firms Digital Transformation: Countermeasure of Outsmarting External Epidemics Environmental Changes	623

Design and Research on Fire Fighting System of Typical Substation	528
Electrical Research Institute of Shanxi Electrical Power Company of SGCC, China), Chunguang Ren (Economic and Electrical Research Institute of Shanxi Electrical Power Company of SGCC, China), Xiaoyang Dong (Economic and Electrical Research Institute of Shanxi Electrical Power Company of SGCC, China), Yaju Wang (Economic and Electrical Research Institute of Shanxi Electrical Power Company of SGCC, China), Tianming Guo (Economic and Electrical Research Institute of Shanxi Electrical Power Company of SGCC, China), Qian Li (Economic and Electrical Research Institute of Shanxi Electrical Power Company of SGCC, China), and Shuai Zhang (Economic and Electrical Research Institute of Shanxi Electrical Power Company of SGCC, China)	
Route Feedback Induction Under user Equilibrium	532
Bi-Level Scheduling Optimization of Integrated Energy System Considering Waste Power Plant 6 Xueying Zhuge (North China Electric Power University, China), Chaobo Liu (North China Electric Power University, China), Guotian Yang (North China Electric Power University, China), and Xinli Li (North China Electric Power University, China)	537
Predicting Stock Market Movements Through Daily News Headlines Sentiment Analysis: US Stock Market	642
The Design and Application of Software Measurement and Evaluation Model Based on Process Management	549
Stereo Visual Odometry with Information Enhancement at Feature Points	554
Research on the Construction of Big Data Management System in the Whole Process of Prefabricated Buildings	562
Robot Swarm Navigation: Methods, Analysis, and Applications	566
Healthy Ways to Cope with Stress: Home Exercise Advice for People During the COVID-19 By sEMG	6 7 3
Luoyuan Jiang (Auburn University, USA), Ruoxi Li (Rensselaer Polytechnic Institute, USA), Zizhong Wang (Nanjing Foreign Language School, China), Zeshun Lin (Northeaste Forestry University, China), and Sile Li (HuBei University of technology, China)	

Reduce the Medical Burden: An Automatic Medical tri-age System using Text Classification BERT Based on Transformer Structure	. 679
Deep Hash Based on Asymmetric Learning and Center Contrast	. 686
Team Analysis Based on Digital Twin Within RoboCup 2D Simulation	. 691
Recipe Bot: The Application of Conversational AI in Home Cooking Assistant	. 696
Text-Based Industry Classification Based on Chinese A Share Annual Reports	. 701
A Self-Design Protocol of Transport Layer to Implement File-Sharing Box	. 705
Evaluation on Emergency Plan of Mobile Pressure Vessel Based on AHP and Fuzzy Comprehensive Evaluation Wei Tian (Zhejiang Academy of Special Equipment Science; Key Laboratory of Special Equipment Safety Testing Technology of Zhejiang Province), Ping Tang (Zhejiang Academy of Special Equipment Science; Key Laboratory of Special Equipment Safety Testing Technology of Zhejiang Province), Jie Tang (Zhejiang Academy of Special Equipment Science; Key Laboratory of Special Equipment Safety Testing Technology of Zhejiang Province), Shuai Kong (Zhejiang Academy of Special Equipment Science; Key Laboratory of Special Equipment Safety Testing Technology of Zhejiang Province), and Muda Jin (Zhejiang Academy of Special Equipment Science; Key Laboratory of Special Equipment Safety Testing Technology of Zhejiang Province)	. 710
Research on the Evaluation System for the Implementation Effect of the Chinese Water Efficiency Mandatory National Standard for Water Closets (GB 25502-2017) Based on Big Data Platform and FAHP Method	. 714
Construction of ODR Platform of Engineering Construction Laws and Regulations Based on Cloud Computing Technology	722
Management System Design for Automobile Maintenance and Repair Based on Strusts2	. 728

Analysis of the Advantages of the M1 CPU and Its Impact on the Future Development of Apple Zixuan Zhang (Tianjin University of Technology, China)	732
Comprehensive Benefit Evaluation Method of Energy Internet Platform Based on Cloud Model? Anbang Xie (Economic and Technology Research Institute of Henan Electric Power Company, China), Peng Li (Economic and Technology Research Institute of Henan Electric Power Company, China), Zihao Tong (North China Electric Power University, China), Yihan Zhang (Economic and Technology Research Institute of Henan Electric Power Company, China), Yongle Zheng (Economic and Technology Research Institute of Henan Electric Power Company, China), Kaiqiang Leng (North China Electric Power University, China), and Huixuan Li (Economic and Technology Research Institute of Henan Electric Power Company, China)	736
Apple Single Product Category Resource Information Platform Construction: the Example of Shandong Province	743
Research on the Optimization of food Supply Systems	747
Wind Environment Simulation and Assessment of a University Campus Based on CFD	751
Author Index	757