

2022 IEEE International Conference on Electrical Engineering, Big Data and Algorithms (EEBDA 2022)

**Changchun, China
25-27 February 2022**

Pages 1-712



**IEEE Catalog Number: CFP22BC9-POD
ISBN: 978-1-6654-1607-8**

**Copyright © 2022 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:	CFP22BC9-POD
ISBN (Print-On-Demand):	978-1-6654-1607-8
ISBN (Online):	978-1-6654-1606-1

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

Table of Contents

PID	Paper Information	First Page
ED003	Evaluation of Power Angle Stability of Power System Based on Eigenvalues of Trajectory Section Jiacheng Ruan, Yongji Cao, Hengxu Zhang, Bosong Xu, Yuehan Wang, Huan Ma	1
ED004	Bi-Level Control Strategy for EV Charging in Active Distribution Network Based on Wavelet Decomposition Yongji Cao, Qingwen Xu, Hengxu Zhang, Bosong Xu, Jiacheng Ruan, Dong Yang	6
ED005	Localization Approach for Forced Oscillation Source Based on Synchrosqueezed Wavelet Bosong Xu, Yongji Cao, Hengxu Zhang, Yuehan Wang, Jiacheng Ruan, Kang Zhao	11
ED006	Optimal PMU Configuration in Distribution Networks Based on Fault Diagnosis Capacity Yuehan Wang, Yongji Cao, Hengxu Zhang, Bosong Xu, Haotian Yu	16
ED008	Degradation assessment of solar cell array of low orbit satellite in orbit Yu Hui, Pan Yanhui, Li Xiaoying, Guo Wenming	21
ED009	Study on the influence of the secondary air offset adjustment of the octagonal tangentially boiler on the deviation of the flue gas temperature Tong Boheng, Zhang Xin	24
ED011	The Nonlinear Complementary Function (NPC) BASED Scheme for Elastoplasticity Problem: A Comparison Study Tingyi Liu, Chao Luo	29
ED012	Research on fault detection technology of autonomous underwater vehicle navigation system Zongsheng Wang, Qi Zhang	35
ED013	Study on Fit Degree of the Short-circuit Calculation Based on BPA and National Standard Meilun Zhang, Jin Zhang, Jianfeng Zhao, Yuanting Hu	39
ED016	Research on Intelligent Online Evaluation of Synthesized Performance of the De-NO _x System in Coal-fired Power Plant Che Yao, Cao Hao, Hu Sheng, Lu Ling, Chen Wei, Zhou Yanming	42
ED017	An enhanced TDR and multi-ratio measuring method for locating long-distance distribution cable joints Zhe Hou, Bo Yang, Chen Shi, Kun Zhao, Sen Teng, Xiahaoyue Yun	46
ED019	Multi-spectral registration fusion based on laser point cloud Hanjie Yuan, Yong He, Limeng Dong, Liang Chen, Yu Zhang, Jianan Yao, Qi Tan	50
ED020	Application exploration of Daqing smart tourism big data based on association rule mining and machine learning Xiao Li	54
ED022	Research on UAV Network System Security Risk Evaluation Oriented to Geographic Information Data Shaogang Liu, Jiangli Chen, Guihua Hong, Lizhu Cao, Ming Wu	57
ED023	Research on Smart Analysis System of E-commerce Trade Based on Computer Big Data and Cloud Computing Jiayi Chen	61
ED025	Selection Method and Algorithm of International Benchmarking Objects in Distribution Network Haiyun Song, Guowei Gao, Hua Zhang, Li Ma, Xinxin Feng, Xiaofeng Zhang	65
ED026	Image Deblurring Analysis Based on Deep Learning Algorithm Xiaotian Liu	68

ED028	Exit Decisions Inspired by Reinforcement Learning Huaidian Hou	73
ED030	Detecting dynamical parameters in evacuation behavior via deep convolutional neural networks Huaidian Hou	78
ED031	Active Distribution Network Reconfiguration Method Based on Photovoltaic Generation Prediction He Ming, Ma Chunyan, Duan Qing, Ni Shan, Deng Wenwen, Liu Xinyan, Li Zhenyi, Chen Yin, Shi Yong	82
ED033	Quantitative Diagnosis of Micro-water in Oil-paper Insulation Transformer Based on Integral Function Li Jiyu, Chen Xue, Chen Dacai, Cai Chao	88
ED034	Research on Active Monitoring System of Power Supply Service Demand Based on Computer Big Data Maomao Ding, Li Zhang, Yeteng An, Shihui Xu, Ying Wang	93
ED037	The design and implementation of Matlab-based nonlinear data fitting for infrared sensors Yang Xusheng	97
ED039	Intelligent Online Evaluation Model of WFGD System Performance Based on Gas-liquid Mass Transfer Data Analysis Che Yao, Cao Hao, Hu Sheng, Lu Ling, Chen Wei, Zhou Yanming	103
ED041	Research on Treatment of Bus Voltage Sudden Change in Equipment operation Songlin Luo	107
ED042	Power Line Engineering Computer Investment Prediction Model Based on SVR-PCA Weiya Guan, Hong Chen, Guowen Li, Ye He, Xuanbin Hu, Zhouyue Ling	110
ED043	A Novel Heart Disease Classification Algorithm Based on Fourier Transform and Persistent Homology Yin Ni, Fupeng Sun, Yihao Luo, Zhengrui Xiang, Huafei Sun	116
ED045	Research on Characteristics of Electricity Theft Behavior and Risk Early Warning Technology Based on Big Data Information of the Internet of Things Rongguo Huang, Chunguang Lu, Shuhong Hu, Di Tang, Boliang Pan	123
ED047	Research on Risk Analysis Technology of Electricity Stealing Behavior Characteristics in Smart Grid Renkai Niu, Jipeng Liu, Xinlei Zhang, Wei Guo, Boliang Pan	128
ED050	Research on the Application of Monitoring Technology Based on the Influencing Factors of Line Loss in the Power Consumption Area in the Power Consumption Information Collection System Chen Gao	132
ED051	Designing and analysing an annular multiple-electrode GER fluid damper on shear-flow mode Kecai Sun	137
ED052	Design of High Power Density DC/DC Converter Cheng Hao, Shaobo Xiao	141
ED053	Research on parallel mean flow technology of high-voltage vacuum circuit breaker Xiaomo Su, Jinghui Luo, Bing Xu, Lintao Li	146
ED055	Human Body Pose Intelligent Estimation Based on BlazePose Zhang Min	150
ED056	Research frontiers of pre-training mathematical models based on BERT Guang Li, Wennan Wang, Liukai Zhu, Jun Peng, Xujia Li, Ruijie Luo	154
ED058	Adaptive Quantization Control for Multi-machine Power System with SVC and Unknown Disturbance Shunjiang Wang	159

ED059	An algorithm optimization IEGS model considering P2G operation characteristics using particle swarm optimization Changtong Yang, Yongliang Liang, Kejun Li, Yang Liu, Lisheng Li	164
ED060	Numerical prediction based on sub-beam decomposition for magnetic deflection in MRI-guided proton therapy Delin Hu, Ping Tan, Yinjie Lin, Jiadong Li, Dong Li	171
ED061	Research on Construction Method of Knowledge Graph in Electric Power Operation and Maintenance Field Based on Few-shot Bin Xu, Dong Jiang, Jingxian Lv, Shuo Zhang, Zhimin Li, Zixing Yang	175
ED062	Research Status of High Temperature Superconducting Power Cable Zhe Wang, Zhining Lv, Peng Yu, Zhonghang Li, Bangzhu Wang	182
ED063	Study on the Induced Voltage of Concentric High Temperature Superconducting Cable Zhe Wang, Hong Xie, Zhining Lv, Peng Yu, Zhonghang Li, Tengbiao Chen, Bangzhu Wang	187
ED064	Application of big data technology in petroleum engineering intelligent information system Liang Huan, Meng Haojie, Xue Tian, Mu Hui, Yang Zihan, Zhou Lihao, Zhang Yunpeng	191
ED065	Fault Identification of Dry-type Potential Transformer Combining Improved Genetic Algorithm and Frequency Domain Spectroscopy Zutao Peng, Bin Zhang, Yunhua Yang, Jie Peng, Zheng Jian, Jian Hao, Xize Dai	195
ED067	A low-power, small area and low manufacturing cost oscillator circuit Hongyi Wang, Shuaiqian Chen	200
ED068	Research on the Intelligent System of Computer Big Data Technology to Guide Athletes Guangyu Qin, Na Ding, Junjie Yan	203
ED070	A Preliminary Exploration of the Knowledge-Coin Value System of State Grid School Based on Blockchain Chengxiang Chen, Qiangqiang Zhu, Guangze Zhu	208
ED071	Application of Computer Sports Big Data Informatization Construction Comprehensive Intelligent Information System Ren Jiang	212
ED072	An optimized particle swarm optimization algorithm is used for Moire fringe signal correction Nanjian Hou, Yuchun Chang, Yusong Mu, Hailong Gu	217
ED073	Research on the Accommodation Capacity of Renewable Energy in Power System Based on Holomorphic Embedding Method Qin Qin, Libo Zhang, Nianchun Du, Jian Zhang, Runzhao Lu, Wensheng Li, Dongliang Zhang	221
ED075	Short-term mathematical prediction model of air quality based on CEEMD-ELM-PSO Hairong Qu, Runnan Zhang	227
ED076	Structural response analysis of composite fiber blade of small wind power generator turbine blades Hongguang Jin, Haidong Liu, Liang Ma, Haitao Gu, Junyao Wang	233
ED077	Big data analysis of the influence of ambient temperature on electric vehicles Shijian Zhang, Yunlong Zhang, Qingyu Meng, Boya Zhou	239
ED079	Analysis and research on abnormal causes of lightning impulse test of 500kV transformer Qu Limin, Wang Chao, Zhang Jian, Gong Mingchen, Xu Minhu, Liang Jianquan	245
ED080	An Optimal Adaptive under Frequency Load Shedding Using Artificial Neural Networks Wei Jinhua, Bao Yanyan	249

ED085	Application of Comprehensive Utilization Intelligent System of Multiple Renewable Energy Heng Zhang	254
ED086	Suggestions and Effect Evaluation Model for Automobile Manufacturers' Deployment of Power Battery Recycling and Utilization under the Dual-Carbon Target Ping Chen, Meng Wu, Pan Wang, Longhui Li	257
ED088	UV detection technology of insulator discharge based on UAV platform Zunshou Li, Likun Ding, Jie Liu	261
ED089	Application of Computer Big Data Technology and Algorithm Optimization in Logistics Distribution Management Cong Li	266
ED091	Current Status, Hot Spots and Trends of Media Exposure Research—Based on the Visual Perspective of CiteSpace (2000-2020) Si Tao, Hua Zhang	272
ED092	Development and Research of Document Intelligent Information Systems in Library Based on Computer Big Data Xinming Wang	277
ED093	Calculation and Analysis of Supporting Force of Auxiliary Members Based on New Code of Tower Structure Hu Guoyong, Chen Hao	281
ED095	Research on Intelligent Supervision System of Flower Greenhouse Based on Embedded Sensor Wu Xuejian, Li Jiameng	284
ED096	Application of BIM technology and intelligent monitoring system in building quality control Liu Yaji, Xu Xiaoqian	288
ED097	Study the operation process of factory greenhouse robot based on intelligent dispatching method Liwei Chu	291
ED100	Remote Network Pharmacology Course Reform through Artificial Intelligence and Cloud Platform Qun Chen, Xing Zhang, Shanshan Li, Jie Wang, Chengbing Tan	294
ED101	Routing of vehicles by intelligent algorithms in the matter of transporting goods Hadi Raeesi, Amirhossein Hosseinpour	297
ED102	Study on the Discoloration Mechanism of Cavity Type Microfluidic Camouflage Film Lujia Li, Huanhuan Li, Songjing Li	303
ED104	Design and Realization of Network Course Virtual Simulation System Based on Digital Media Technology Cui Jing	308
ED108	Collaborative delivery of information flow in big data supply chain Yang Hongxiong, Lv Mingrui	312
ED109	Mathematical evaluation model of financing constraints and R&D innovation from the perspective of big data and cloud computing Shuwang Zong	315
ED111	Fuzzy analytic hierarchy process applied in product reputation research through reviews, ratings and big data analysis Yuntao Ma, Jian Huang	319
ED113	Research on intelligent home care system based on Internet of Things Zhaoning Liu	326
ED114	Research on Optimization of Pipeline Layout in Mechanical and Electrical Installation of BIM Technology Yuan Qingmin, Zhao Xingyu	329

ED117	Safety traceability application of electrical equipment based on Internet of Things identification Jiuxin Cui, Huanjuan Wang, Kaimei Zhao	334
ED119	Geographic information system and climate big data applied in the research of bird migration Lingyi Tang	338
ED121	Study on supply and demand Interaction strategy of load aggregator Wu Guoqi, Xu Yichuan, Li Bo, Jing Xiaosong	342
ED122	Research on bending toughness calculation of steel fiber reclaimed concrete based on finite element analysis software Nie Qianpeng, Liu Haonan, Guo Ziyi	347
ED123	A review of cabin fire and numerical simulation technology and intelligent fire protection technology Hongjing Zhou, Guoqi Zhang, Kai Ren	353
ED125	Design and Implementation of Intelligent Health System Using Big Data and Cloud Computing Xiaolei Zhong	358
ED126	Research on Campus Convergent Payment System Model Based on Blockchain Big Data Algorithm Yanbo Sun, Shangming Ye	364
ED127	Calculation and Data Analysis of Waste Batteries Recycling Mathematical Modeling He Sichao, Cui Enyou, Wang Pan, Hu Song, Li Longhui	368
ED129	Computer Aided Design and Application of Internet-Based SPOC Blending Courses Using Big Data and Cloud Computing Zhen Wang, Jianbo He	372
ED130	Computer Vision Used in Industrial Robots Li Pengyuan, Yuan Gang, Zhang Shaowei, Li Yonggang, Guo Libing, Yang Haimin	375
ED131	Robotics and Artificial Intelligence Applications in Remote Data Acquisition, Data Analysis and Disease Early Warning Hu Yangbing	378
ED132	Background analysis of digital transformation of automobile enterprises based on SWOT analysis method Yang Hongxiong, Wang Huiming	386
ED134	Fine-grained Emotional Analysis and Intelligent Identification of Electric Power Public Opinion Based on Attention Mechanism Lintan Sun, Shenghao Cui, Yeteng An, Chenfei Wang, Zhenying Tang, Can Song, Wei Zhao, Huimin Zhang	390
ED135	Statistical analysis of green building research hotspots based on bibliometrics big data and cloud computing Da Chen	396
ED138	A Glimpse of Research on Underwater Target Intelligent Detection Technology Yifei Liu, Ning Zhang, Lei Xu, Ruikun Huo, Pengfei Lin	400
ED139	Design of a space dual-arm robot and its ground microgravity simulation platform Dong Que, Li Xinyu, Meng Shaohua	405
ED141	Research on Application of Computer Big Data and Mobile Communication Technology in Intelligent Nursing Service Platform Weixin Zhang, Yue Ming, Guiling Li	410
ED142	Application of Industrial Robot and Internet of Things in Intelligent Manufacturing System Supported by Software and Hardware Xiaoqing Xu, Xiaowei Liang, Zhihao Guo	415
ED144	Intelligent Face Recognition under Large Pose Liangfa Zhang	419

ED145	Research and Application of Artificial Intelligence and Computer Big Data Technology in the Individualized Nursing Care Platform Chunmiao Xu, Yin Gao, Li Qi, Guiling Li, Meiqian Li, Liqun Yang	421
ED146	Research on Intelligent Mobile Police Application Based on 5G Technology Chen Cui, Guomin Zhou, Chao Chen	426
ED149	Research on the Construction of Unmanned Combat System under the Background of "Network Cloud Enabling" Wang Haoming, Li Nan, Gao Qiang	430
ED150	Engineering Methodology of E-Wisdom Enterprise Service Hub Intelligent Information System & Platform Jian Zhang, Qi Lu, Xiaojun Sun	434
ED151	Mathematical Analysis and Assessing Video Games' Competitive Structures in Terms of Nonzero Sumness Shikun Liu	439
ED153	Research on Computer Evaluation Index System of Digital Maturity of Automotive Supply Chain Yang Hongxiong, Xu Xiaowen	442
ED155	LFM-D2GAIN: An Improved Missing Data Imputation Method Based on Generative Adversarial Imputation Nets Yebai Shen, Chao Zhang, Songyu Zhang, Jinghua Yan, Fanliang Bu	447
ED156	Research on application of article recommendation algorithm based on Word2Vec and Tfidf Rui Wang, Yuliang Shi	454
ED157	Research on Application of BIM Technology in Building Carbon Emission Intelligent Monitoring System Xinyao Huang, Youxi Xu, Shanying Wu	458
ED158	Fracture Data Analysis and Calculation of Drilling Tools in Gravel Formation in Dabei/Bozi Block Jinsong Huang, Jiaqi Zhang, Wei Feng, Dalu Wang, Yuan Mei, Xin Wang, Yahua Zhao	463
ED160	Simulation Research of Full-Ocean-Depth Manned Submersible Based on Experimental Data Chao Deng, Bing Zhao, Mingyu Yang, Yang Zhao	468
ED162	Intelligent On-line Monitoring Systems of Process Stability in Lapping Process Zhichao Geng, Ping Zhou, Dongming Guo	472
ED163	Research on Application of Computer Artificial Intelligence Technology and Intelligent Monitoring System in Pharmacological Lab Zhang Qingya	475
ED165	Data Analysis on the Computer Intelligent Stock Prediction Model Based on LSTM RNN and Algorithm Optimization Yimian Yao	480
ED166	Optimizing 3D Virtual Fitting Mirror Using Augmented Reality Technology under Internet Plus Zuqin Wei	486
ED168	Application of Computer Virtual Reality Technology and Artificial Intelligence in Remote Network Course Qu Hui	490
ED169	A Brief Introduction of the Text Classification Methods Luning Yang	495
ED173	Simulation and Optimization of Helicopter Composite Main Blade Production Line Based on DELMIA/Quest Zhang Xiwen, Lyu Ruiqiang, Xiao Qingdong	499
ED175	Airport Taxi Decision Algorithm Based on Queuing Theory Qingcheng Xu	507

ED176	Ideal Construction of Chatbot Based on Intelligent Depression Detection Techniques Xiao Huang	511
ED177	Optimization of reflecting surface adjustment of FAST radio telescope based on improved Harris Hawk Optimizer Yang Guiao, Ruan Zhelin, Zhang Ziyu	516
ED178	Application of Training Simulation Software and Virtual Reality Technology in Civil Engineering Xiaoling Hong, Bo Lv	520
ED180	Differentiated Attention with Multi-modal Reasoning for Video Question Answering Shentao Yao, Kun Li, Kun Xing, Kewei Wu, Zhao Xie, Dan Guo	525
ED181	Intelligent Music Style Classification System Based on K-Nearest Neighbor Algorithm and Artificial Neural Network Jiacheng Dai	531
ED182	Multi dimensional disease intelligent detection device for underwater pier column structure through machine learning Bikai Yang, Han Bing, Haiyang Zhao, Tianshu Gu, Tianxiao Cai	544
ED183	A Model Sharing Technology Between Smart Substations and Dispatching Master Stations and Its Engineering Application Wei Wang, Dongfei Cai, Jun Zhou, Li Song, Shunjiang Wang, Lipeng Wang	550
ED185	Artificial Intelligence and Intelligent Information Systems Based Multi-Dimensional Classroom Computer Evaluation Model Fu Hai, Li Gang	555
ED187	Bus peak period scheduling scheme: An improved multi-stage decision model Wangliang Yan, Luyun Chen, Rui Qu, Zheyong Qiu	559
ED188	Development of ‘Space Cloud Orbit’ Operation Simulation System Yuan Xia, Jingtao Peng, Jiahao Zhang, Pengyun Song	564
ED189	A Dim-small Target Real-time Detection Method Based on Enhanced YOLO Mingyang Yan, Jianbo Sun	567
ED190	Research on the Image Calculation and Change of Glacier Area in West Kunlun Based on Remote Sensing and Information Extraction Luxiang Shang, Zhengkun Jiang, Hao Guo	572
ED192	Study on effective bonding conditions calculation and data analysis for the field joint of pipelines by intelligent accurately controlling Dai Bingtao, Han Mingyi, Fan Weichao, Zhu Wei	576
ED193	Computer simulation of low-temperature protective clothing based on target planning and heat transfer modeling Lijie Fu, Yitong Liu, Peiyang Zhu, Delin Sun, Youtong Ji, Ziqi Tang, Zhengyue Li, Hebing Hou, Yapeng Zhang, Buyun Ma, Keke Zhao, Yan An, Kechao Xu	582
ED195	The Application of Virtual Simulation Technology and Artificial Intelligence in Network Vocational Course Jian Xu, Yadan Zheng	587
ED196	Research on cross-domain recommendation algorithm based on quadratic collaborative filtering Jiang Chun, Tang Lin, Shi Hong	591
ED198	Research on Scientific Sports Training System by Computer Big Data Technology and Intelligent Monitoring Meng Yalan	595
ED199	Machine Propositional Model Research Based on Natural Language Processing Jie Zhou, Yuqi Sun, Baoping Wang, Zheng Wang, Kun Li, Xujia Li	599
ED200	Review and Enlightenment of Foreign Auxiliary Service Cost Allocation Mechanism in Power System Maoqian Wu, Changsheng Su, Yiqian Sun, Chenglei Zuo, Chao Yang, Guangmang Gao, Siwen Zhang, Yong Yang	603

ED201	Data Analysis and Intelligent Control System of Water Pollutants in Aircraft Hydraulic System Daye Xie, Zhonghai Sun, Biao Liu	607
ED203	Drone-View Object Detection Based on the Improved YOLOv5 Yanzhao Yang	612
ED206	Structural design and finite element analysis of underwater gas leakage intelligent monitoring array Yang Chong, Zhuang Rui, Zhang Guoguang, Wang Wenyun, Jiang Chunhua, Jiao Yucheng, Li Guotao	618
ED209	Design of Mobile Internet Platform and Information Visualization Based on Furniture Display and 3Dmax Zuo Wenyan, Wang Ming	625
ED211	Computer assisted design and test of gas leakage simulation device for underwater structure Yang Chong, Zhuang Rui, Zhang Guoguang, Jiang Chunhua, Jiao Yucheng, Li Guotao	629
ED215	Research on Comparison Analysis of Fiber Grating Based Strain Monitoring Sensors in the Laboratory Lu Peng, Genqiang Jing, Chunxia Zhang, Rui Wang	634
ED216	Collaborative development of system dynamics model based on cloud computing and big data analysis Kaiyue Zhao	641
ED217	The Advance of Reinforcement Learning and Deep Reinforcement Learning Le Lyu, Yang Shen, Sicheng Zhang	644
ED218	Research on Cold Chain Logistics Credit Mechanism Based on Blockchain under Computer Big Data and Internet of Things Zhiyuan Li, Xue Sun, Wenbin Pan, Yongdi Yu	649
ED221	Development and Comparative Analysis of Humor Intelligent Detection Methods Puqi Song, Sijia Sun, Mingkun Wan	654
ED223	Research on Application of Computer Virtual Reality Technology in Sports Simulation Training Huang He	658
ED224	Facenet: A Cloud-Based Application Framework for Social Network Yiteng Hu	663
ED226	Food Safety Remote Online Course Using Intelligent Mobile Terminal and Network Technology during COVID 19 Lockdown Yang Yu, Guifang Chang, Xiaowen An, Jinfeng Gong, Chunhui Liu, Yuanyuan Sui, Otobong Donald Akan, Yanxia Xing, Zhaoxue Zhang, He Zhu	667
ED228	Design of Digital Frequency Meter Based on Embedded System Meng Chao	671
ED229	A real time intelligent detection and counting method of cells based on YOLOv5 Ji Zhao, Yujing Cheng, Xin Ma	675
ED230	Research on Ocean Technology and Engineering Electronic Information Transmission Model Based on Computer Big Data Jiacheng Liu, Huajian Feng, Hang Jiao	680
ED231	The Design of Current Sensor Based on Diamond Magnetometer Zhao Long, Qiu Rujia, Wang Xin, Wang Lijun, Sun Feng, Chen jia	685
ED232	Study on the influence of operating environment conditions on the performance of power lithium battery system Chenglong Liao, Jianyan Wang	688
ED233	Current Situation Analysis of Echelon Utilization of Traction Battery for New Energy Vehicle Industry Wang Jingyi, Hui Yijing, Hu Song	693

ED234	Intelligent Screening Method in Oral Drugs by Visual Lamp System Specific Detection Technology Wang Hongxiu, Li Xiaotian, Chen Linzhu, Xie Jiaqi, Wu Lulu, Xie Yi, Lin Xinying, Jin Liang, Ma Guangqiang	697
ED235	Research on Optimal Adjustment of FAST Active Reflector Based on Nonlinear Objective Programming Ma Shuran, Zhang Shiwen, Yin Yaru	702
ED239	Attention Network with PMI Value for Medication Recommendation Algorithm Du Changping, Chen Yang, Dai Wenkai, Wang Shijie	707
ED240	Research on the Application of Signal in Chaotic Background in Physical Inverse Filter Jing Lv, Yue Liu, Xiaowei Sun, Yuhao Fan, Jungang Zheng, Xiuhong Wang, Chenying Qian	713
ED242	Application and Research of UAV Remote Sensing Technology in Soil and Water Conservation Yihui Zhang	718
ED243	Research Progress of Nickel-Rich Ternary Cathode in Lithium Battery Li Dongjie, Hui Yijing, Feng Ze, Tang Yougen, Ou Tengjiao	722
ED245	Discussion on Difficulties in Online Monitoring of Substation Boundary Noise Che Yao, Lu Ling, Cao Hao, Hu Sheng, Chen Wei, Zhou Zhou, Zhou Weihua	729
ED246	A Review of Improved CMOS Dynamic Comparators Zhuoling Li, Yuan Ma, Zan Xie	734
ED249	Intelligent Classification for Emotional Issues by Deep Learning Network on EEG Signal Processing Shaokang Yin, Feiyu Zhu, Xiaojie Wei, Gongen Han, Runqi Zhang, Xi Liu, Bingliang Hu, Quan Wang	742
ED251	The Insulation Aging State Assessment of High Voltage Cable Based on the Isothermal Relaxation Current Heqian Liu, Lin Li, Kexin Zhang, Hang Zhang, Zhongyuan Li, Jianquan Liang	748
ED253	A quantum computing simulator scheme using MPI technology on cloud platform Zhiguo Huang, Ling Qian, Dunbo Cai	752
ED254	Intelligent interactive test system for the human-machine interface function of electric vehicle charging piles based on computer vision Yanyan Xiang, Xue Yuan	755
ED255	Research on Financial Recommendation Algorithm Based on User Interest Evolution and Big Data Qiuyang Shen, Yuliang Shi, Yong Shao	764
ED257	A Radius-tapered Algorithm for Indoor Positioning System Ke Min, Jian Xu, Changlong Wu	770
ED259	Research on Tourism Network Marketing Mathematical Strategy Model under Mobile Internet Plus and Big Data Jianbo He, Hansheng Sun, Bojian Xiong, Yanqing Zhou	774
ED260	Research on Mathematical Statistics Method Based on Computer Big Data Huajian Feng, Jiacheng Liu	779
ED261	Garbage Detection Algorithm Based on YOLO v3 Liu Bohong, Wang Xinpeng	784
ED263	Image Aesthetic Computer Assessment Model Based on Score Distribution Xiukun Xu, Jiangbo Xu, Ruoyu Zou	789
ED265	A Recommendation Model of Deeply Fusion Rating matrix and Review Text Meigen Huang, Nan Xiao	793
ED266	Research on intelligent supply control method of nutrient solution based on fuzzy neural network Yuan Jiangqi, Zhong Chenchao, Ren Guangjin	797

ED268	Research on Comprehensive Energy Efficiency Control and Optimization Technology for the Internet of Things for Three-Dimensional "Common Intelligence" Visualization Yunfu Xie, Jifeng Yang, Yujian Wen	801
ED270	Design and application of substation simulation training system suitable for internet multi-mode Sun Xiaotao, Zhao Chengjie, Zhang Hong, Zhao Xilan, Gao Feng	807
ED271	Quasi-PR multi-layer photovoltaic grid-connected control based on frequency feedback Dacai Chen, Zhiyuan Guo, Xue Chen, Jiyu Li, Zhixin He	810
ED273	Research of Passenger Vehicles in Battery Rental Model Based on Mathematical Model Yijing Hui, Zelei Jiang, Chunjia Ran	815
ED275	Effect of geometric parameters on heat transfer performance of square tube wound tubular heat exchanger Zhouwei Zhang, Fawei Yang	819
ED277	Digital Marketing 4.0 Visualization System Based on Smart Buildings under the Background of Aging and Intelligence Meichai Li, Jian Yang	827
ED280	Application of Virtual Simulation Technology in the Teaching of Practical Courses under the Background of Specialty Clusters Tian Tian	831
ED281	Research on anti-jamming technology of missile-borne radar seeker in complex electromagnetic environment Shi Chunpeng, He Junxiu, Han Xiaofei, Zhang Xiaoyu	836
ED283	Systematic Research on Energy and Carbon Emissions Based on SD Model under the Background of Big Data Fen Li	842
ED285	Research on Application of Computer Big Data Technology in Physical Electricity Experiment Yue Liu, Jing Lv, Jungang Zheng, Liwei Han	846
ED286	Research progress of automatic dismantling technology of new energy vehicle traction battery Ziqi Xu, Ping Chen, Xionghui Chen, Pan Wang, Song Hu, Qiaona Wang, Dongjie Li, Longhui Li	851
ED287	Five-axis NURBS Toolpath Fitting Method Based on Shear Leap Characteristic Points Liangji Chen, Wenyi Wu, Huiying Li, Jinneng Tang, Zisen Wei	855
ED288	Computer Assisted Design and Implementation of Diagnostic Evaluation Model in Online Test Qu Hui	859
ED292	Research on Key Technologies of the New-generation Highly Integrated Vehicle Intelligent Management Systems Guo Yong, Ma Chao, Lv Hao	863
ED293	Optimization of dual NURBS curve fitting in five-axis machining Liangji Chen, Jinneng Tang, Huiying Li, Wenyi Wu, Zisen Wei	866
ED294	Word Normalization Information Systems and Improved Learning Representation for Ontology Matching Minxian Wang, Jing Peng	870
ED296	Research on Multidimensional Electronic Behavior Portrait Technology of Electronic Archives Based on Blockchain Han Shaoqin, Li Jiangtao, Zheng Shangzhuo	875
ED297	Research on the analysis and visualization of the transfer network of China's new energy vehicle technology based on patent information Gao Qian	880

ED299	Computer Intelligent Comprehensive Evaluation Model of Energy Storage Power Station with Full Life Cycle Yao Yongfeng, Qi Gan	886
ED300	Research on the Construction of Library Digital Resources Based on Computer Big Data Technology Zhengyu Sha	890
ED303	Research on surface defect intelligent detection technology of non-woven fabric based on support vector machine Yuanmin Huang, Ming Yi, Weihang Yang, Man Yang	895
ED306	Application scheme and strategy of electronic archive four-attribute automatic detection based on blockchain Huanjuan Wang, Shaoqin Han, Zhuofan Wu, Jin Ao	899
ED308	A blind source separation sorting algorithm for sonar echo signal based on frequency-point amplitude correlation Pingping Lin, Zongsheng Wang, Ying Chen	905
ED309	Computer Intelligent Stock Prediction Model with Mathematical Statistics and Machine Learning Techniques Chenhan Li	910
ED310	Research of China power industry software application analysis Xie Hongbin, Shan Yu, Xie Xiangying, Ge Leyi, Xu Huiming, Wang Shaohua	915
ED311	Improved YOLOv5 in Remote Sensing Slender and Rotating Target Detection Zhong Bo, Yang Luyuan	918
ED312	Application of Computer Internet Technology and Cloud Computing in the Intelligent Information Management Database of Students Jiapeng Li	924
ED315	Research on Intelligent Information System Construction of Online Class Based on Computer Big Data and Virtual Reality Technology Xiuying Zhou, Yong Hu	931
ED318	Smart Guide Trolley Mango: Smart Blind Guide Device Based on Raspberry Pi Jiayi Wu, Peiqi Yang, Yicong Chai, Kexin Zhang, Siyu Liang, Jingwen Mo, Cheng Liu	936
ED320	Research on Online Cloud Experience System of Featured Tourism Products Based on Computer Virtual Reality Technology Lei Xiao	942
ED321	Evaluation calculation model of overhead transmission line crossover sag based on microclimate environment monitoring data Zhu Minjie, Zhou Linggang, Li Jianhua, Wang Guanhua, Liu Long, Liu Shengchun, Liu Jianjun, Zhang Jun, Zhang Zhao	947
ED323	Research on Improved Yolo on Garbage Classification Task Zhai Pan	951
ED326	Research on product force enhancement model based on genetic algorithm and nonlinear programming Yi Wang, Yang Ding, Xiuqi Huang	954
ED327	Radiator design of micro heat pipe array inverter in high altitude area Wan Li	959
ED328	Stability Evaluation of Deep Foundation Pit Based on RBF-AHP-Fuzzy Comprehensive Evaluation Model Zhongning Liu, Pengfei He, Shuangqiang Liu	963
ED333	Sparse nonlinear dimension reduction algorithm Daoxuan Xu	967
ED334	Deep learning technology for re-identification of people and vehicles Yixiong Wang	972
ED336	Punctuality Analysis of Aviation Industry Based on Python Data Mining Algorithm Xi Miao	976

ED338	Study on optimal adjustment of ammonia injection in thermal power units based on deep peak shaving Ziwei Zhong, Lingkai Zhu, Zhiqiang Gong, Wei Zheng, Panfeng Shang, Junshan Guo, Jun Liu, Yanpeng Zhang	979
ED339	Personalized Reader System Based on the Characteristic Information of the Recommended Object of the Resource Shuo Zhang	983
ED340	Improvement of Plant Growth Model Based on Particle System and Its Computer Simulation Analysis Zhao Yao	988
ED341	Optimization of Deep-Learning Network Using Resnet50 Based Model for Corona Virus Disease (COVID-19) Histopathological Image Classification Sun Jing, He Kun, Yao Xin, Hu Juanli	992
ED346	Research on Economic Control of Microgrid Group Gaoyuan Cai	998
ED352	Research on Efficient and Safe Operation of Substation Automation System Sun Zhiyu	1003
ED354	Thermal Power Load Calculation Model and Resistance Analysis Based on Exhaust Pressure Panfeng Shang, Lingkai Zhu, Junshan Guo, Zhiqiang Gong, Yue Han, Wei Zheng, Jinxi Lao	1006
ED356	Integrated design of solar photovoltaic photothermal building based on micro heat pipe array Wan Li, Liu Chengpeng, Sangyonglamu	1010
ED357	Simulation Research on Parameters of Compressed Air Energy Storage System Yanchi Liu	1014
ED362	Analysis of the Influence of the Number of Split Wires on the UHV Electromagnetic Environment Ni Wang	1017
ED363	Optimal design analysis of wind solar complementary power stations in Tibet Zhou Liqing	1020
ED365	Analysis on the current situation of solar energy utilization in Shannan area of Tibet and suggestions for popularization Liu Chengpeng	1024
ED366	Application of power condition monitoring system in ocean exploration robot Zhu Ying, Li Jiao, Xu Xinjian, Lv Haiqiang	1028
ED368	Research on Model and Algorithm for Uncertain RCPSP with Job Reworking Ruibin Ju, Jing Ni, Lingxia Ouyang	1031
ED371	Research on Control Mechanism of FAST Nodes Based on Goal Programming Lipeng Zhang	1040
ED372	COVID-19 Literature Mining and Analysis Research Xie Luling, Wang Zixi, Chen Yequi, Wen Yichao, Zhao Di	1045
ED377	Simulation and Optimization of Instrument Mechanism Based on ADAMS and Genetic Algorithm Zhongfu Bao, Runxi Gu	1053
ED379	Research on a closing and opening manipulator of molded case circuit breaker Han Xiangjiang, Wang Xin, Liu Ya, Gao Yong, Peng Lei, Song Zhi	1058
ED380	Design of multi-channel transcranial DC stimulator based on STM32 Li Tang, Xuehua Tang, Zhiyong Zhou	1060
ED381	Stabilization power pedestal for navigation buoys based on Bragg resonance Ziyu Lei, Chengzhi Wang, Jiaqi Xing	1063
ED382	Alzheimer's level classification by 3D PMNet using PET/MRI multi-modal images Chao Li, Liyao Song, Guangpu Zhu, Bingliang Hu, Xuebin Liu, Quan Wang	1068

ED385	A Comparative Study on the Monte Carlo Localization and the Odometry Localization Yefeng Sun	1074
ED386	Research on upstream pulsation of secondary source in hydraulic Pipeline active control Huang Cheng, Cheng Guo, Yu Wenjing, Xu Rongwu	1078
ED387	Pupil Dilation Reflecting the Characteristics of Attention Networks of Patients Using Image Processing Huangyemin Zhang, Shirui Wen, Guangpu Zhu, Kailing Huang, Bingliang Hu, Quan Wang, Li Feng	1086
ED388	Nondestructive Testing Technology of Solid Rocket Engine Based on Acoustics Li Bojun, Li Jian	1093
ED390	Research on License Plate Character Recognition Technology Based on Image Processing and Deep Learning Chun Chen, Xiaolei Zhong	1098
ED392	An intelligent software testing method for online advertising strategy Zhiqiang Lu	1103
ED393	Research on FPGA-based modulation algorithm for directional sound sources Dandan Ding, Long Cheng, Yongchun Xu, Jinyu Guan, Fanliang Bu	1106
ED395	Credit Card Fraud Intelligent Detection Based on Machine Learning Duojiang Mu	1112
ED397	Underwater attached organisms intelligent detection based on an enhanced YOLO Zidong Sun, Yanfeng Lv	1118
ED399	Design and Performance Analysis of ZYNQ Based Incremental PID-PWM Controller Mengqi Liu, Heng Zhang, Yi Zhang, Chengwei Yuan	1123
ED400	Deep Learning Approaches on Multimodal Sentiment Analysis Zisheng Cai, Han Gao, Jiaye Li, Xinyi Wang	1127
ED403	Deep Learning Approaches for Image Classification Techniques Youyou Guan, Yuxuan Han, Siqi Liu	1132
ED406	A Solution of Driving Computer Peripherals without Adapter Drivers Based on Device Redirection An Ning	1137
ED407	Some thoughts on the application of 3D printing technology in the field of maintenance and support of large construction machinery and equipment Yan Shan, Yan Gao	1141
ED408	Computer aided design and performance analysis of permanent magnet planetary gear Zhentao Chen, Zhen Liu	1146
ED412	Application of Color Management System in BOM Configuration and Big Data Analysis Bohan Yu	1150
ED414	Modal analysis of a V-type engine crankshaft based on Workbench Wang Bo, Zhang Qiang, Li Ting, Jiang Yizhuo	1154
ED417	Design and optimization of a novel lower limb assisted smart robot technology —Evaluation of human-computer interaction based lower limb assisted robot design Jiayi Cai, Jialiang Cai	1157
ED418	Research and Application of GIS Partial Discharge Signal Positioning Based on UHF Intelligent Sensors Wei Jing	1163
ED422	A cross-chain technology based on a licensed public chain Li Zhiping, Liu Dongpo, Zhang Bo, Guo Jian, Nie Fanjie	1168

ED423	Big Data Analyzing Techniques in Mathematical House Price Prediction Model Jiahao Yang	1174
ED426	Research on Computer Big Data Technology in Generative Countermeasures Network Security Protection Yin Xuxi	1178
ED428	Application of Computer Big Data and Convolutional Neural Network Technology in Guiding the Training Standardization Yiqiang Liu, Hao Liu, Shujun Zhang, Chen Liu, Wei Liu	1184
ED430	Image Style Transfer Using Deep Learning Methods Sihan Ren, Yiwei Sheng	1190
ED433	The Dilemma and Prospects of Deep Learning Guangyi Xu	1196
ED435	Research on the Auxiliary Application of Computer Big Data Technology in the Creation of Literary Works Xue Wu	1200
ED436	The Relationship Between Depth and Broadness Based on Artificial Neural Networks Yizhe Song	1205
ED439	Research on Personalized Recommendation System Based on Machine Learning Yong Fang	1209
ED442	Research on Entity Relationship Joint Extraction Technology Based on Multitask Learning Yeteng An, Shuo Zhang, Rui Yang, Hu Zhang, Qing Zhu, Long Chen	1214
ED444	Research on DM Algorithm Based on Association Rules and Its Application Liwen Shi, Wen Fan	1217
ED445	Long-Range Control of Hybrid Cockroach Robots Carried with Ejectable Microphone Zhenxuan Wang	1222
ED446	Coverage Analysis of Conical Beam Antenna for LEO Satellite Relay Terminal Zhang Wei, Wang Yong, Dong'ai Hua	1226
ED449	Research on Trustworthiness Evaluation Based on Web Service Composition Zhang Yanhong	1233
ED450	Short Sale Attack: A PoW-blockchain-aimed attacking model via short sale Yuhuai Zhang, Wei Yang, Weilin Chen, Lide Xue	1240
ED451	Research on Interactive Genetic Color Matching Design Based on User Cognitive Noise Wu Fan, Wang Jiaoqing	1247
ED453	Novel Multi-pattern Reconfigurable Horn Antenna Made of Pure Water Zhaopeng Luo, Hejun Jiang, Meiwu Wu, Zhen Ren, Jie Lei	1251
ED455	Research on Key Technologies of D-IoT Management Platform Based on Smart IoT Management System Dai Wei, Wang Gang, Xi Yangyang	1255
ED458	Identification and Detection for Plant Disease Based on Image Segmentation and Deep Learning Lu Yang, Tao Hong, Ping Luo	1260
ED460	An Improved Method to Train the Model Rapidly for the Classification of Ceramic Tiles Tiankai Shi, Qunfei Zhao, Chao Liu	1265
ED461	An enhanced Siamese Recurrent Model with Word Importance for Learning Sentence Similarity Xiaocheng Hu, Zhong Zheng, Huibo Li, Wenshan Wang	1270
ED463	A Real-Time and Convenient Taxi Assistance Mini Program for the Visually Impaired Zhongda Qi, Zhi Yu, Sihao Chen, Wei Wang	1274

ED464	An Efficient and Real-Time Emergency Exit Detection Technology for the Visually Impaired People Based on YOLOv5 Sihao Chen, Zhi Yu, Zhongda Qi, Wei Wang	1280
ED466	Analysis of Learning Behaviors Based on Learner Portraits Silin Li	1285
ED467	An inhomogeneous hidden Markov model for state recognition of lithium battery Hailin Feng, Qiao Ma	1290
ED469	Indoor 220GHz Channel Measurements and Analysis Yang Shen, Weiming Wang, Fusheng Zhu, Kun Yang, Weijin Li, Zhengrong Lai	1295
ED471	Research on Guangxi Yulin's Poverty Return Identification Based on Integrated Learning Long Jing, Pan Xiuzhi, Zhao Qianrong, Li Junjiang	1299
ED472	Research on Visualization Technology of Ocean Situation Based on OSG Chen Guo, Shaobin Wang, Qianfei Chen, Eryang Gao, Zhanshuo Zhang, Xiaoyi Li	1305
ED475	Application Research of WSN Key Distribution Scheme Based on SBH Yang Zhikai, Li Yongzhen	1309
ED477	Safe and Effective Elliptic Curve Cryptography Algorithm against Energy Attack Jianbo Yao, Chaoqiong Yang, Tao Zhang	1313
ED478	Multi-agent Collaborative Fire Rescue Based on Deep Reinforcement Learning Yiming Feng	1317
ED479	Research on Data Security Sharing in Blockchain: Challenges and Prospects Cong Zhong, Kai Liu, Zhihong Liang, Yuxiang Huang, Fei Xiong, Zhichang Guo	1322
ED480	An Analysis on the Weibo Topic Detection Based on K-means Algorithm Meihua Li, Keqing Wu, Le Chen	1328
ED483	Multi-view Road Disease Detection Based on Attention Fusion and Distillation Jiadi Mo, Yue Wang, Zhi Yu, Yangyang Wang, Shoujing Yan	1332
ED485	Research Review of Object Detection Algorithms in Vehicle Detection Hao An, Kai Liu, Zhihong Liang, Mingming Qin, Yuxiang Huang, Zhichang Guo	1337
ED487	Coarse-to-Fine Network for Crowd Counting Zhiyuan Sun	1342
ED489	An Decentralized Anonymous Payment Confidential Transactions with Efficient Proofs and Scalability Jianeng Miao, Zhen Han	1347
ED492	A Personalized Privacy-Preserving Scheme for Federated Learning Zhenyu Li	1352
ED493	HC-GSA Identification Method of Bad Data Based on Gap Statistical Algorithm Jianlou Lou, Feng Liang, Zhaoyang Qu, Junqi Jia, Xiangyu Li, Keyu Chen	1357
ED496	Multi-scale network traffic anomaly detection based on improved genetic algorithm Yiping Chen, Fengshan Yuan	1362
ED497	Research on color enhancement of interior design renderings based on perceptual optimization Du Sensen	1368
ED499	UAV Electric Patrol Path Planning Based on Improved ant Colony Optimization-A* Algorithm Zhao Changxin, Wu Ligang, Wang Yiding, Zhang Xiao, Cui Yandong, He Anming, Hu Anqiao	1374
ED501	Research on Linear Demodulation Method of Doppler Radar Vital Signal Xiufang Yang, Zhen Jiao, Yankang Yang	1381
ED503	The Research on Underground Safety Inspection and Gas Methane Detection Based on Industrial Internet Technology Meng Zhang, Dewei Zhao, Huimiao Yuan, Liang Kong, Rangyong Zhang	1386

ED505	Intelligent Value Added Service Platform of Smart Library Based on Blockchain Technology Lin Hu	1391
ED508	Information Disclosure and Privacy Protection System in Epidemic Prevention and Control under the Background of Big Data Juan Qiao	1395
ED509	Earthquake disaster collection system based on mobile terminal Wenjing Zhang, Yina Yin	1399
ED510	Research on the Design and Application of Human-Computer Interaction Media Based on Digital Trading Platform Liu Dan	1404
ED513	Optimal configuration of diesel-storage micro-grid vehicle considering PV uncertainty Zhihai Tao, Peng Yu, Ning Sun, Shiyan Gao, Yancheng Li, Huaqiang Shao	1410
ED515	Risk Analysis of CT Saturation Caused by Aperiodic Components Zhang Guoxin, Wang Ganlin, Liu Hongshun, Yu Dayang, Wang Qilin, Chen Long	1416