

2023 IEEE 2nd International Conference on Electrical Engineering, Big Data and Algorithms (EEBDA 2023)

**Changchun, China
24-26 February 2023**

Pages 1-652



**IEEE Catalog Number: CFP23BC9-POD
ISBN: 978-1-6654-6254-9**

**Copyright © 2023 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP23BC9-POD
ISBN (Print-On-Demand):	978-1-6654-6254-9
ISBN (Online):	978-1-6654-6253-2

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

Table of Contents

PID	Paper Information	Page
EE001	A Novel Modern Power System Stabilizer Tuning Approach on Site Using Multi-objective Lighting Flash Algorithm Qingsong Chang, Yang Lei, Xinlin He, Chunli Li, Baiming Liu	1
EE002	Design of series voltage compensation device based on rectifier-inverter unit Wang Shiqing, Chen Gang, Liu Yitao	6
EE003	Application of data mining in logistics industry in the era of big data Lu Jinyang	10
EE006	Network Information Resource Allocation under Big Data Technology Xiaoting Mou, Hao Chen	15
EE007	Research and Design of an E-Commerce Platform for Ceramic Crafts Based on UML Model Yusen Yang	20
EE009	Research on the optimization of same-city fresh food delivery path based on improved Hopfield neural network algorithm Deyun Zhou	24
EE010	Structure Design of Self-service Data Governance about Sea-based Measurements He Jing, Xu Xianchun, Wang Luyao	29
EE012	Intelligent Garbage Sorting Assistant Based on Mobile Internet Zuo Wenyan, Shi Qin	34
EE013	Automatic Diagnosis of COVID-19 Based on Machine Learning Zhuoyang Li, Shuyang Yu	38
EE014	Prediction from Breast Cancer Images by Logistic Regression and AlexNet Models Tianyou Wen	42
EE016	Research on Cross-Border E-Commerce Customer Service System under the Integration of Computer Big Data Shanyu Gu	49
EE018	Electric vehicle load optimization model considering peak and valley electricity price time Zhiying Zhang, Wenyi Li, Xiaolong Li	54
EE019	Data Recovery of Power Plant Platform Based on Generative Adversarial Network Jiyang Jia, Tao Xu, Meiju Li, Xuhong Li, Wenwen Pan	59
EE021	Ionospheric Delay Inversion in the Working Area of Spacecraft TT&C Ship Based on BDS Feng Zhang, Yibin Ren, Shengyi Cheng, Yu Zou	62
EE023	Operation optimization of power and natural gas integrated energy system based on multi-objective optimization Ma Weizhe, Huang Fuquan, Lin Zizhao, Weng Yixuan, Qi Hui, He Xiaofeng	66

EE024	Design of Monitoring System for Wind-Solar Hybrid Power Supply System in Laboratory Ying Xiao, Guangya Zang, Lirong Zhang	70
EE025	Nature-inspired Path Planning for Robot Swarms Zhiheng Quan	74
EE027	Solving the Traveling Saleman Problem Using Reinforcement Learning Jiazhao Liang	79
EE028	Research on Logistics Distribution Route Optimization Based on Ant Colony Algorithm Siyuan Guo	84
EE030	Research on Digital Image Encryption Based on Chaotic Syste Guangtong Niu	89
EE031	Research of Boosting Algorithm Machine Learning in Logistics Enterprise Financial Risk Prediction Yunyi Zhang	94
EE033	OS-Net: A novel oriented ship detector based on RetinaNet Chunxuan Jiao	99
EE034	A regulated identity management system based on blockchain platform Xiaoyu Qian, Jun Li, Yanzhao Liu	103
EE036	Research on Accurate Portrait Construction of Online Platform Learners Based on Data Analysis Hongli Liu	109
EE039	Method of Clothing Image Retrieval Based on Convolution Neural Networks Zuo Wenyan, Shi Qin	113
EE041	Knowledge Encapsulation and Application Based on Domain Knowledge Graph Xiaoping Chen, Jianfeng Wang, Hong Zhang, Qingjie Hu	117
EE042	Research on the Application of Computer Big Data Technology in Information Security Management Yong Zhang	124
EE044	Attribute prediction of Pokémon images based on convolutional neural network Junwei Justin Chu, Zijie Shan, Xiang Sun	129
EE045	Control strategy of three-phase PWM rectifier based on improved double closed loop sliding mode control Xingzhi Zhang, Cheng Liu, Yaoze Zhang, Yongyin Qu	135
EE048	Research on Software Reliability Evaluation Based on Architecture Xingfa Li	139
EE049	Identification of Grape Leaf Diseases and Insect Pests Based on Artificial Intelligence Zhengang Yao	144
EE050	Multivariate Network Intrusion Detection Methods Based on Machine Learning Rui Liu	148
EE052	Research on People Counting Methods of Subway Cars Based on Improved Random Hough Transform Yin Ling, Tian Hongjin	156

EE054	Optical Remote Sensing Ship Object Detector Based on Improved GWD Yinzhe Cui	160
EE055	Application of cloud computing technology and standard dictionary in elevator Internet of Things Hua Yang, Yu Fan, Lifang Dai	166
EE057	Grid Load Forecasting Based on Dual Attention BiGRU Wang Xiang, Wu Zhanxia, Ge Junxiong, Zhang Zhanhao, Han Lincheng, Wang Shunjiang, Zhang Xiuyu	169
EE060	Research of the Routing Strategy under the Constraint of Privileged Load in Complex Networks Xiujuan Wang	174
EE063	Research on road image enhancement based on histogram equalization Donglei Zhang	178
EE064	Research on Optimal Dispatching Method of Integrated Energy Network in Agricultural Industrial Park Considering Demand Response Hai He, Xin Chen, Qian Wang, Yuting Zhao, Shu Wang	184
EE066	Field Distribution in Shielding Case from Space Electromagnetic Interference during Switching Operation in Substation Bo Zhang, Xianglong Meng, Yanqun Huang, Jianan Qu, Lu Guo, Shuxian Fang	189
EE067	Research and Improvement of Greedy Projection Triangulation Algorithm Zhengqiu Yao, Yue Gao, Hao Guo, Yiwei Song, Xingqi Zhou, Wenzhuang Zhou	194
EE069	Recent progress of infrared stealth technology for ships Nan Li, Ke Li	200
EE070	Design of AD Conversion Controlled by Microcontroller Haichao Yu	205
EE071	Displacement Calculation and Simulation Study under Body Frame System Jinbo Qiu, Cong Liu, Qizhi Zhang, Dong Zheng	209
EE073	Preparation study of load spectrum of traction system Bo Liu, Cong Liu, Deyu Zhuang, Jinbo Qiu	213
EE075	A DDoS attack detection algorithm based on improved grid search to optimize SVM in SDN environment Meigen Huang, Boqi Zhao	218
EE076	An Improved Pointer Chinese Text Summarization Model Donglin Ma, Ce Yang, Qingqing Chen	223
EE077	A Text Classification Model Based on Gaussian Multi-Head Self Attention Mechanism for Chinese Medical Data Mo Chen, Chunlong Yao, Xu Li, Lan Shen	229
EE079	A review of the virtual power plant with the vehicle to grid Siyu Nie	233
EE080	Research on Technology and Standards of Underwater Sensing and Communication for Internet of Things Hong Yang, Xiong Guo, Xueqian Zhang, Gen Lei	240

EE082	A Non-Intrusive Load Monitoring Model Based on Graph Neural Networks Xintao Jiao, Guoyi Chen, Jiale Liu	245
EE085	Modeling Method of Dynamic Knowledge Graph for Distributed Manufacturing Resources in Cloud Manufacturing Shihui Zhou, Dunbing Tang, Yi Zhang, Shuqi Zhang	251
EE086	Working principle and application analysis of UART Lehan Cao, Jianfeng Chen, Jincheng Li	255
EE088	Analysis and Comparison of Asynchronous FIFO and Synchronous FIFO Enze Xie, Jingfeng Zhou	260
EE089	Design and Implementation of HDB3 Clock Recovery Module with Large Frequency Range Haoxiang Li, Shengbo Lu, Zixiang Zhao	265
EE091	Analysis and Comparison of UART, SPI and I2C Jinrong Chen, Shengqiu Huang	272
EE092	The Principle and Applications of Asynchronous FIFO Zixu Hao, Lingxi Liu, Birong Tian	277
EE094	Optimization of UART Communication Protocol Based on Frequency Multiplier Sampling Technology and Asynchronous FIFO Wenyu Wang	280
EE095	Gaussian Wasserstein distance based ship target detection algorithm Suying Wang	286
EE097	Prediction of Electric Vehicle Charging Demand in Rural Areas Based on Driving Track Data Jing Xu, Hua Wang, Wei Zhang, Tianyao Wang, Changting Wu	292
EE099	Electromagnetic Interference Protection Method of Beidou Positioning Terminal Near High Voltage Transmission Lines Peng Wu, Liang Ge, Jiuhao Guan, Guang Chen	297
EE100	Spatial Electromagnetic Interference Calculation of Arc Discharge in High Voltage Transmission System Based on FDTD Heping Li, Peng Wu, Tao Zheng, Wanchun Luan, Xi Wu	302
EE101	Data Analysis of Abnormal Harmonic of Offshore Wind Farm Zerong Yang, Yongpeng Wen, Shuhan Ye, Qian Guo, Lei Zhao	307
EE103	Research on Security and Electronic Countermeasure of Wireless Quantum Communication System Wang Haoming, Zhao Weikang, Li Nan	313
EE104	GAN-based image deblurring: A comparison Qi Feng, Liyan Jiang, Yuyang Ji, Ruihan Zhang	318
EE106	Research on Resource Search Technology and Student Diagnostic Evaluation in Distance Education System Sun Hui	325
EE107	Research on Label Recognition Method of Power Grid Item Based on Deep Learning Bai Guangyu, Zhang Xin, Zhang Yongqiao, Zhu Pengyuan, Sun Pengfei, Qiu Zheng	330

EE108	Construction and Accurate Retrieval Method of Knowledge Graph of Automobile Engine Fault Jin Tang, Chengxian Xu, Wanda Zhang	336
EE110	Research on bank customer churn model based on attention network Yang Wang, Shanhong Zheng, Gang Liu, Jiajin Li	346
EE111	High-precision GPS Signal Tracking Method Based on TDOA/FDOA Phase Fringes Teng Jiang, Weixuan Cui, Wenxuan Liu	351
EE114	Research on Gender Difference of Car Following Behavior Based on Natural Driving Data Zhichao Xing, Huitong Fu, Hui Zhang, Zhonghao Ji	362
EE115	Research on the design of maximum output power of wave energy device under the condition of pendulum motion Zihao Jia, Weihang Han, Ziyu Sun	368
EE117	Multimodal emotion recognition based on feature fusion and residual connection Xinxue Du, Jiahui Yang, Xiaoxin Xie	373
EE118	Research on third-order damping technology of ESGN vertical channel Jianping Dai, Cong Liu, Qizhi Zhang, Dong Zheng	378
EE121	To prevent the LAN IP address from being preempted and conflict resolution countermeasures Lei Zhang, Weihua Zhu, Jian Xu	382
EE122	Network Monitoring and Security Protection Design of Wind Farm Centralized Control Center Chengsheng Yang, Wuyi Zhang	386
EE123	Pure Azimuth Passive Positioning in Attempted UAV Formation Flight Xianzhe Li, Mengshuang Wang	390
EE124	Intelligent energy-saving parking system design based on deep learning Yuzhen Chen, Yuzhe Mao, Chenxi Qi, Guangping Zhao, Yuesong Zhao	396
EE126	A Parameter-Optimized CNN Using WOA and Its Application in Fault Diagnosis of Bearing Yuchen Cui, Siwei Zhang, Zhaohui Zhang	402
EE128	PISA architecture chip resource scheduling algorithm design and implementation Zhu Tao	407
EE129	Short-term Power Load Forecasting Based on Particle Swarm Optimization Long Short-term Memory Neural Network Ziteng Zhang, Wenhao Xu, Qingdong Gong	412
EE130	Multi-objective optimal configuration of two-stage reactive power compensation in power grids with power loss index Guo Ting, Xu Liangde, Chen Zhonghao, Yang Fan	417
EE132	Research on Digital Twin Optimization Algorithm of Logistics Distribution Based on Computer Virtual Reality Technology Lirong Liu, Yanling Fan	425
EE134	Research on 3D Visualization Logistics Intelligent Scheduling System Based on Digital Twin Yanling Fan, Wei Yao	431

EE135	Research on Digital Twinning Technology in the Construction of Computer Digital Logistics Intelligent Twinning System Wei Yao, Lirong Liu	436
EE136	Analysis of energy storage operation and configuration models for high ratio wind power systems Xiaoya Li	441
EE138	Blockchain Security Risk Monitoring of Power Supply Chain Based on Fuzzy Neural Network Zhangwei He	446
EE140	Long-term Power Generation Forecasting Method Based on BAS-BP Neural Network Mingsheng Cai, Fuda Xing, Peng Cui	452
EE143	Improved Topologies Towards Existing Types of Single Phase Rectifiers Shuhan Gou	457
EE144	Design model of maximum output power of wave energy Bo Liu, Rui Zhao, Weiqin Wang	462
EE145	Pipe scale cleaning device based on YOLO algorithm and Carmen vortex street Rui Cheng, Tianren Hou	470
EE149	Real-time Video Fire Detection via Convolutional Neural Networks Junxun Huang, Xuemei Ma, Yulong Wang, Xiao Li	475
EE150	Research on Effect of High Temperature on SiC MOSFET Electrical Characteristic Parameters Haobo Guo, Zhifei Wang, Shunli Guo, Li Shuai, Yaonan Wei	482
EE151	Research and Development of Hybrid Impact Tester Based on Hydraulic Servo System Nannan Cheng, Xiaohui Gao, Yongguang Liu, Liang Wang	487
EE153	Research on Control Strategy of Offshore Wind Power Transmission System via MMC-HVDC Xuchao Ren, Haidong Huang, Ye Wang, Yu Cui, Peng Li	494
EE154	Bearing Health Detection Method Based on Wavelet Time-Frequency Spectrum and Parametric Improved CNN Yuting Liu	499
EE156	Intelligent Agricultural Data Collection and Analysis System Based on Internet of Things Xiaohui Wu, Gan Li	506
EE157	A Multi-stage dynamic evaluation method of distribution network with renewable energy based on hierarchical incentive control line Zhongqi Cai, Kun Yang, Zhixin Huang, Jian Cao, Zhongxi Ou	510
EE160	Recognition of Italian Gesture Language Based on Augmented YoloV5 Algorithm Nengxiang Zhang, Yujie Huang, Zhuofan Sun	517
EE162	Light-YOLOv5: A Lightweight Algorithm for Improved YOLOv5 in PCB Defect Detection Meng Ye, Hao Wang, Hang Xiao	523
EE163	Research on Ore Processing Quality Prediction Based on XGBoost ESN Method Jinhui Zhang, Wei Xu, Xinyu Zhang	529

EE165	Risk Prediction of Diabetes Based on Spark and Random Forest Algorithm Ziqi Dai, Zihan Hu, Tianle Shen, Yuan Zhang	535
EE168	Pavement crack identification and detection based on multi-task learning Zhuo Chen, Xiaoke Huang, Siqi Liu	540
EE169	Research on Indoor Target Positioning System Based on Image Feature Extraction and Recognition Pengsen Lu, Jie Zhang, Xin Lin, Jingwen Qi, Yuxing Chen, Kaiyan Yang	547
EE170	Modulation identification method based on time-frequency analysis and support vector machine Xinyi Huang, Xiang Li	551
EE172	Query performance optimization method for blockchain carbon footprint data Tiantian Xu, Tianmei Chen, Ying Zhang, Xiaocao Zuo, Menghao Liu, Linghe Zhang, Yingwen Feng, Yu Wang, Chenxi Yu, Yuezhu Zhao	555
EE175	A Review of Research on Testability Technology for Complex Systems Hao Zhu, Mingzhong Qiao, Ying Shao, Pan Sun	559
EE176	Identifying interphase short circuits in the tator of a multi-phase generator using coils Hao Zhu, Mingzhong Qiao, Ying Shao, Pan Sun	564
EE177	Research on fuzzy comprehensive forecasting of large user power unproductive load based on demand response Shaoping Gu, Zhong Zheng, Yafei Li, Jie Song, Yi Liu, Weiguo Zhang	568
EE179	Method for Initial Point Positioning of V-bevel Welding Seam Based on Binocular Vision Shaocong Sun, Junjie He, Tianqi Wang, Kekuan Wang, Zhiwen Lei	572
EE180	High-speed Real-time Infrared Image Target Detection Method Based on Intelligent Platform Yuan Gang, Li Pengyuan, Huang Jian, Zhang Bing, Jin Yunfei, Yu Xiong	577
EE181	Research on Network Information Security Model Based on Computer Artificial Intelligence Technology Jiali Xiao, Yifeng Li, Tian Yan, Lihua Li	582
EE183	UAV positioning based on pure azimuth passive Yaofei Wu, Wenyuan Wang, Guoyu Zhang, Kunji Yang, Yang Chen	586
EE185	Study on Passive Pure Azimuth Positioning Model and Position Adjustment Model of UAV Jiaju Li, Zihao Li, Ruihao Wang	591
EE187	Pure azimuthal passive positioning model for UAVs flying in circular formation Siben Li, Yujia Chen, Ting Jiang	595
EE188	RSSI-KNN: A RSSI Indoor Localization Approach with KNN Xiaoshan Zheng, Ruojin Cheng, Yiming Wang	600
EE189	Pure azimuth passive localization in attempted formation flight of UAVs under different constraints Liye Jin, Yaotian Xu, Qingwang Mei	605
EE191	Optimization of additional heat production performance of air conditioning compressor based on hybrid particle swarm optimization algorithm Yalun Wu, Fengling Zhang, Yanchao Su	612

EE192	Motion and Power Study of Wave Energy Devices Based on Runge-Kutta Method and Variable Step Search Algorithm Gengshuo Shi, Yuan Feng, Jiale He, Yucheng Li	618
EE193	Ultra-compact dual-wavelength-dual-mode (de)multiplexer utilizing topology optimization Zhikai Zhao, Yongheng Jiang, Yubo Deng, Pengfei Cao	625
EE196	Blind Lane Detection Algorithm Based on Improved YOLOv5s Xueli Gong, Bingxu Pan, Zhongwen Yang, Wenyao Liu, Haoran Zheng	629
EE197	Optimal parking research based on path and power optimization Boyang Li	634
EE198	Wind Speed Prediction with LSTM and BPNN Method Wencan Zhang, Fengji Wang, Yuying Yang	642
EE199	AureNet: A Real-Time Arbitrary-oriented and Ship-based Object Detection Mingyue Liu, Yingyang Chen, Daorui Ding	647
EE200	Rev-RetinaNet: PCB defect detection algorithm based on improved RetinaNet Jiwei Tang, Yiming Zhao, Dan Bai, Qin Liu	653
EE201	Design and Implementation of Travel Website Based on Java Web Yanqi Guo	659
EE203	Distributed Data Multi-Level Storage Encryption Method Based on Full-Flow Big Data Analysis Yong Ma, Yuyang Zhao, Zijian Zhang, Jun Wang	664
EE204	Research on location planning of 5G base station based on DBSCAN clustering algorithm Lifan Jiang, Boyi Huang, Lingfeng Chen, Zijia Li	669
EE206	AC current online calibration device based on digital image recognition and fiber optic sensor Xiaocan Chen, Juzheng Zhang, Qiming Zhang	676
EE208	Pure orientation passive positioning of UAVs in different formations and initial positions Minghao Jiang, Junliang Liu, Zecheng Li	681
EE209	A study of base station establishment site selection based on cluster analysis Runxi Luo	686
EE210	Application of Pure Azimuth Passive Positioning in UAV Formation Haoming Yang, Qianrun Wang, Wenbin Sun, Mengge Liu	692
EE212	Improved K-Nearest Neighbor Missing Data Classification Based on Interval Value Imputation Ziyang Zhang, Can Tang	698
EE213	Analysis of control strategy of three-phase bridge fully controlled rectifier circuit based on PID principle Xinmeng Zhang, Ziyang Liu, Xiangtao Wang, Zhiyong Ji	703
EE215	Study on the maximum output power of wave energy under vertical oscillation and longitudinal rocking motion Qianxun Li	710

EE216	UAV passive positioning model based on multi-objective iterative optimization Tianle Yang, Wenshuo Yu, Luchen Zhang	716
EE217	Formation Adjustment of Bearings-only Passive Location UAV Based on Triangulation Runyi Jiao	721
EE220	A multi-objective traffic flow detection system based on an improved yolov4 algorithm Xinyi Chen, Yuxuan Zhai	726
EE222	Research on emergency supplies distribution in 5G network environment based on K-class mean value algorithm Ziyu Sun, Zihao Jia, Weihang Han	731
EE223	Bearing health monitoring based on SSA optimization of AlexNet hyperparameter Yang Xie, Qihang Wang, Hongji Yu	736
EE224	Laser slam-based autonomous navigation for fire patrol robots Chang Liu, Wei He, Xiaohua Cai, Ziyang Xie, Xinyao Zhang	742
EE227	Base station planning problem based on genetic algorithm and K-Means clustering algorithm Ziwen Wang	747
EE228	Research on the maximum output power of wave energy based on micro-amplitude wave theory and potential flow theory Pengfei Chen	753
EE230	Temperature Field Simulation of Partial Discharge in Oil-Paper Capacitor Bushing Ping Peng, Yun Liu, Xun Wan, Lezhi Ou	759
EE231	Short-term power load forecasting based on PSO-GRU Xinyun Jiang, Yuyao Zhang, Yutong Liu	764
EE233	Sound Field Simulation and Excessive Noise Analysis of Station Boundary for Two Typical 220kVSubstations Tang Qi, Chen Wei, Cao Hao, Hu Sheng, Wei Cai, Jue Xiao, Weiyang Peng	770
EE234	Application of mutual information and improved support vector machine in power load forecasting Kexin Zhu	775
EE236	A 5G-Based Big Data Security Access Processing Method and Device Abduani Abdulklimu, Peng Yan, Gang Wang, Hu Liu, Junpeng Xie	780
EE238	Research on Location Decision Optimization of Communication Station Based on Simulated Annealing Particle Swarm Optimization Zehao Su, Yuyu Zhang, Zhiliang Zu, Zhijie Sun	785
EE239	Mobile communication network site planning and regional clustering Haotian Lin, Jianze Lin, Jiannan Lin, Kewei You	792
EE241	UAV Point-point Analysis Based on Analytic Geometric and Iterative Algorithm Pubin Jiang, Shaojie He, Shiyi Qian	799
EE244	Web Random Token Generation Technology Based on Asymmetric Encryption Technology Ying Ling, Xin Li, Dongmei Bin, Chunyan Yang, Jieke Lu	804

EE245	A Hybrid Structure Speech Coding Scheme Based on MELPe and LPCNet Yaoyao Ding, Xinle Yu	809
EE246	Research on Intelligent Home System Based on Computer Internet of Things Shuiying He	813
EE249	The Research of Development of New Energy Industrial Internet Platform Xiangying Xie, Hongbin Xie, Xuening Fan, Cong Luo, Tianxing Xu, Haiyan Li, Leyi Ge	818
EE252	A multi-index comprehensive evaluation method for key technology development of AC-DC distribution network based on neural network Jinhu Wang, Tongzhou Zhang, Ming Cheng, Longqi Zhou, Yuzhuo Zhang, Ruiqi Wang	822
EE253	Simulation Analysis of Time Domain Broadening of Laser Propagation in Seawater Fei Wang	828
EE255	Numerical Simulation of New Energy Vehicle Battery Pack under Different Working Conditions Based on PCM Minghui Zhang, Shunkai Wang, Juan Wang, Ying Cao, Yuwei Bai, Haiwei Wei	831
EE256	Research on Data Synchronization Consistency Comparison System Based on Computer Heterogeneous Database Xuewei Ding, Zhen Jia, Chao Liu, Siyuan Zheng, Qingqin Shang, Jiwei Li	837
EE257	Research on Heterogeneous Data Consistency Comparison System Based on Computer Mobile Database Yuchen Jiang, Yongqi Ai, Xinyi Zhang, Lei Xia, Wenting Liu, Jiwei Li	842
EE258	Research on the design of a target control platform for engineering projects under big data Jieru Song	847
EE260	A Bearing Fault Diagnosis Method Based on Branch Convolution Neural Network Jie Hu, Hairong Yan	851
EE262	Application of Artificial Intelligence, Big Data and Cloud Computing in Optimizing Elevator Safety Performance Yunshu Hu	858
EE264	Research of integrating prior knowledge into abnormal behavior recognition model of EV charging station Weiya Zhang, Ye Ji, Shufan Wang, Liuting Gu, Gang Cao	862
EE265	The Xiangshan IOUT Digital Branch Unit Zhiyong Duan, Jiaqi Hu, Anzhe Yi, Yurui Zhang, Yanhu Chen	868
EE267	Method of Continuous Electrolytic Loop-closing for 30° Phase-angle Difference Line Based on Three-Level Protection of Distribution Network Lintao Yuan, Zhen Liu, Daoyu Li	872
EE269	Application Research on the Measurement of Unintended Car Movement Protection Lingxiang Kong, Bing Yu, Chunqiu Tian, Yinbing Wu	878
EE270	Knowledge Graph Relationship Prediction Model for Intelligent Search Li Pengyuan, Yuan Gang, Yu Xiong, Huang Jian, Zhang Bing, Guo Libing	882

EE273	Research on Deduplication Technology Based on B+ Tree Index and Hash Index Haocheng Guan	887
EE275	Research on Grid Connection of Virtual Synchronous Generator and Diesel Generator Weiqiang Zhan, Liang Hu, Guang Yang, Xiaoshan Yao, Ziliang Zhu, Mingbo Yang	895
EE276	Research on Carbon Reduction System of 110kV Substation Based on Computer Big Data Zilei Wang, Qiang Xu, Jiabin Yang	899
EE277	Electric heating optimization strategy and economic comparison based on heat load demand regulation capability Pingxin Wang, Qing Wang, Congcong Li, Song Liu, Tingting Wang	904
EE279	CRM-SBKG: Effective Citation Recommendation by Siamese BERT and Knowledge Graph Minghui Yuan, Jing Wan, Danya Wang	909
EE281	Design of a Docking & Charging Device for Unmanned Surface Vehicle (USV) Jiaqi Hu, Bohao He, Zilin Xing, Zhiyong Duan, Canjun Yang	915
EE283	Dynamic Knowledge Graph Algorithm for Electricity Knowledge Jingyi Su, Nan Zhang, Jun Yu, Wenqing Yang, Zhen Sun	921
EE286	State Estimation of Distribution Network Equipment Based on Genetic Algorithm Chunxiu Liu, Wanbin Li, Yuqi Zhang, Zaiyan Zhou, Yimin Liu, Ningning Li	929
EE288	Infrared Target Detection Based on the Fusion of Attention Mechanism and YOLOv5 Zhifei Wei, Jiangtao Zhao, Xiaochen Chen, Aihua Wang, Fang Li, Yifan Gu	933
EE289	An Algorithm for GNSS Timing Interference Analysis Based on Multi-Feature Integration Huijie Guo, Huijun Yang, Shuwei Wang, Xueyun Wang	937
EE290	A fault diagnosis method for ship shaft system based on empirical wavelet transform and particle filtering Yangyang He, Chao Ni	942
EE291	LoRa-based smart greenhouse control system Chao Zhang, Jingyu Yang	948
EE292	Research on GPS Spoofing Signal Identification Technology Based on Inertial Information Assistance Yue Shuai, Zhang Chao	953
EE294	Research on the Evolution Scale of Network Topology Based on FlexE Zhihui Wang, Juan Pan, Huixia Ding, Kaiqiang Gao, Yanan Wang, Fangyun Dong, Sicheng Zhu, Wanqiao Wang	957
EE295	Image Classification for Pneumonia and the Normal Based on Convolutional Neural Network Zhang Rui, Cao Ying, Wang Fangzhe, Bao Xintong, Teoh Teik Toe	961
EE297	A novel method for micro-nano channel alignment with automatic features based on reconstructed Hough transform theory Meng Ge, Gongchen Sun, Guochao Zhang, Lei Gu, Ming Zhang, Junyao Wang	967
EE298	An Ansible-based Distributed Application Architecture Rapid Deployment Scheme An Ning	972

EE300	Research on noise control technology of 110kV indoor substation Xu Liu, Sheng Hu, Chunjin Yang, Tao Huang, Wei Chen, Qi Tang, Hao Cao, Ling Lu	976
EE302	Research on Ventilation and Noise Reduction Technology of High-power Fast Charging Pile Sheng Hu, Jianfei Zhou, Wei Chen, Xu Liu, Jinchun Yang, Qi Tang, Hao Cao, Ling Lu	981
EE303	Research on Man-machine System Safety Auxiliary System Based on Big Data Technology Fu Qiang	986
EE304	Optimal Meter Configuration Based on Harmonic State Estimation Model and Binary Particle Swarm Optimization Wei Wei, Hao Yi, Huaying Zhang, Qing Wang, Zebin Yang, Fang Zhuo	991
EE306	Lightweight Access Control Scheme for Attribute Change Based on Blockchain Haihui Huang, Xin Ran, Xi Zhao	995
EE307	Research on Self-calibration Technology for On-line Monitoring of Substation Boundary Noise Lu Ling, Duan Xinyu, Zhou Zhou, Cao Hao, Hu Sheng, Chen Wei, Zhou Weihua	1000
EE309	A multi-modal decision fusion neural network for emotion recognition using facial information and EEG Yunfei Guo, Wu Huang	1004
EE310	Game Image Detection and Application Based on Improved YOLOv5 Yongqi Cui, Macheng Si, Qi Li	1012
EE313	Research on Electric Vehicle Driverless Test System Based on Computer Big Data Technology Ye Yuan	1018
EE314	Intrusion detection of intelligent substation video surveillance based on average background interframe difference method Shi Qiao, Qixuan Zheng, Wenhao Li, Shu Yang, Haoqiang Zhang	1023
EE315	Study on motion characteristics and power of wave energy device based on Runge-Kutta algorithm Zizhu Wang, Zhuomei Fan, Weizhou Wang	1027
EE317	Research on Integrated Power Electronic Monitoring System of Digital Substation Yang Ren	1033
EE320	Application Research of Microcomputer Relay Protection in Power System Analysis System Yang Ren, Jun Zhu	1038
EE321	A Study on Improved Face Recognition Method Based on Multi-Detection Network and Facial Abnormal Part Beautification Technique Hangyu Cheng, Bin Cao, Yufan Deng, Wanrou Zhang	1043
EE323	A Chinese NER Method Based on Chinese Characters' Multiple Information Daling Li, Haojun Zhang, Jiahui Wang, Shilong Li	1048
EE324	UAV Formation Positioning Model Based on Plane Geometry Analysis Zhixin He, Zhilong Lyu, Xiaomei Dong	1053

EE326	Data mining algorithm based on particle swarm optimized K-means Zhang Cuicui, Sun Jiali, Sun Qi, Wang Peng, Lu Runxuan, Luo Yiwang, Liu Huan	1058
EE327	Research on HPLC Technology System of Client-side Power Internet of Things Ding Zhong'an, Gao Chen, Wang Ruoxue, Li Yijing	1062
EE329	Commercial load data anomaly detection based on LOWESS Shuaibo Wang, Meng Li, Yijuan Liu, Yunlong Chen, Jiyan Liu, Siwei Li, Liang Yue, Shufang Li	1068
EE330	Application of Automatic Degassing Unit in Dissolved Gas Analysis Qiubo Qi, Guodong Qi, Ting Xu, Ruiqiang Zhang	1071
EE332	Short-term load forecasting based on PCA-ILSTM Luo Yi, Wu Yong, Ye Yanfeng, Cui Jinjie, Fu Rao	1075
EE333	Short-term load forecasting based on PSO-ELM Huang Bin, Zheng Xiang, Lin Zhifang, Su Yixiang, Cheng Wei	1080
EE334	A disturbance localization method for power system based on group sparse representation of compressed sensing Zeyi Wang, Mingxi Jiao, Daliang Wang, Minxu Liu, Minglei Jiang, He Wang, Shiqiang Li	1084
EE336	Improved clustering analysis algorithm for density grid data streams Fang Bin, Zhu Shi, Huang Jiahao, Li Haozhi	1090
EE338	Research on Energy Saving System of Energy Controller Based on Ubiquitous Access of Electric Internet of Things Terminal to Low-Voltage Boutique Platform Area Feng Zhou, Haojie Ruan, Junjie Zheng, Qichen He	1096
EE339	Research on Load Forecasting and Early Warning System of Distribution Network Equipment Based on Artificial Intelligence Technology Kaiwen Yang, Ke Lin, Runhui Chen	1104
EE342	The routing requirement analysis and scheme design of air communication AD hoc network in demonstration and training ground Zhang Fengxiao, Xu Zhao	1111
EE343	A Method of Radar HRRP Aircraft Type Identification and Rejection Based on LSTM Li Yonggang, Guo Libing, Wang Yi, Yang Haimin, Hu Shangcheng, Hu Jian	1115
EE344	Wavelength division multiplexers and some experimental analysis in the field of optical communication Zhaohe Gong	1119
EE345	The application of embedded microcontroller in motor control system Liqiang Xu, Peng Chen	1127
EE346	Antarctic Temperature Prediction Based on the Long Short Term Memory Network Shuo Duan, Yuanyuan Tang, Zhicheng Ye, Mingyun Zhang	1133
EE347	Missing Data Imputation in Bridge Monitoring System Based on the Prediction Algorithms Jiaqi Xu	1141
EE350	Design and research on resource management of scale edge data center Haodong Zou, Hui Liu, Ming Tang, Lizhi Zhang	1148

EE351	License Plate Character Recognition with Lightweight Convolutional Neural Networks Bingyan Lin, Fengping He, Zhiping Xu, Lixiong Lin, Yong Guo	1152
EE353	5G Access Protocol for EMU Terminals Congcong Che, Jianan Cui, Zuoyu Wang, Guode Shi, Zhen Liu	1158
EE354	Implementation of FPGA-based hardware acceleration system for U-Net networks Peng Chen, Liqiang Xu	1164
EE356	Research and Implementation of Information Security System Based on Chaos Algorithm Yinshu Wu, Yue Qin, Guangsheng Han	1167
EE358	Design of an Access Control System for Unmanned Bathroom Based on Image Processing Technology Jichao Sun, Jun Wang, Tao Liu, Bin Cheng, Yu Li	1171
EE360	Research on application of 3D modeling in oil and gas field development Junwei Bi, Tianxiao Ren, Bohao Wang, Bo Xia, Hui Xu	1176
EE361	Analysis of Operation Failure of Transformer Oil Chromatography Online Monitoring Device Ruiqiang Zhang, Qiubo Qi, Guodong Qi, Qian Liu	1182
EE362	Improvement of IIR Digital Band-Pass Filter by the Digital Frequency Band Transformation Jichao Sun, Jun Wang, Yong Wang, Jun Li, Bin Cheng	1187
EE365	Energy consumption prediction of public buildings based on PCA-RF-AdaBoost Wu Li	1193
EE366	Active noise control of refrigerator based on improved notch algorithm Chaoping Gui, Hongliang Zhao, Xue Sun, Dejin Ren	1198
EE369	General particle swarm optimization algorithm Wen Chuanjun, Wang Ling, Ren Xuejing	1204
EE371	Research on Sports Live Broadcast System under Computer Big Data Technology Weiqiang Zhang	1209
EE373	Transfer learning for bearing fault diagnosis based on improved residual network Zongli Liu, Shengjun Su, Jie Cao, Ping Yu	1214
EE375	Research on key technologies of high precision post processing kinematics based on multi system and multi frequency GNSS data Cong Li, Xinjian Wang, Yajun Wang	1217
EE376	Research on Multifunctional Inspection System of Power Industry Equipment Based on Infrared Ultrasonic Integration Technology Peiying Wu, Min Yu, Weijie Cao	1221
EE377	Study of binocular parallax estimation algorithms with different focal lengths Mingde Zheng, Ziliang Wang, Heng Li, Jingyu Lu	1226
EE378	Research of Irrigation Optimal Control for Green Island Plants Kai Hu, Xinlan Guo	1230
EE380	Image analysis of crystallizer flux crystal sequence based on OCR model Yaxin Hou, Minghan Zhang, Xun Feng	1233

EE382	Research on the application of service choreography in the intelligent customer service system Zhang Shuo, Yang Rui, Xu Yin, Zhang Yan, Zhao Wei, An Yeteng, Han Wei, Chen Long, Kong Na, Xu Liyang	1238
EE383	Research on intention management and intention switching technology of task-based dialogue based on hierarchical attention network An Yeteng, Zhang Shuo, Yang Rui, Song Pengfei, Zhang Yumeng, Zhang Hu, Xu Liyang, Kong Na, Xu Yin, Zhao Wenhua	1243
EE385	Research on power customer service composite intention recognition based on dependency syntax and graph attention network Sun Lintan, Zhao Wei, Wang Chenfei, Zhang Shuo, Zhang Huimin, Li Ziqian, Zhang Yumeng, Zhang Yan, Li Min, Xu Liyang	1249
EE386	Building a Robot Path Optimization in Prefabricated Buildings Tingjun Li	1256
EE387	Research on the Application of Computer Virtual Reality Technology in Korean Language Teaching Wei Yao	1262
EE389	Research on Automotive TSN network Scheduling Analysis and Simulation Zhu Libin, Zhao Hongchen, Xu Wenchen, Zhou Zhuxin	1267
EE390	Estimating Hurricane Intensity from Satellite Imagery Using Deep CNNs Networks Rui Xu, Zi'ang Wu, Jiaxu Wang, Hongxuan Li	1271
EE393	Research on Application of Computer Virtual Reality Technology in 3D Modeling System Zhang Hui	1276
EE394	Short-term PV Power Generation Prediction Based on QFWA-SVM Model Wu Guilian, Lin Tingting, Tang Lu, Liao Jinlin	1281
EE395	Analysis of Deicing Jump Characteristics of Double Circuit Overhead Transmission Lines Luo Yong, Deng Shaoping, Xu Zhengtao, Huang Xianxu	1285
EE397	Research on application scenarios of operation and maintenance technology based on business perspective Lintan Sun, Jun Mu, Hu Zhang, Jingxian Lv, Wenqing Yang, Xin Chen, Jiajia Zhu	1290
EE398	Research on scheduling strategy of virtual power plant based on multi-objective optimization of load-generating side Wang Xin, Wang Xudong, Xie Lei, Liu Chang, Liang Bo	1295
EE401	Design of intelligent agricultural environmental big data collection system based on ZigBee and NB-IoT Lu Niu	1299
EE402	Design and realization of measuring total harmonic distortion of periodic signal Jiazu Xie, Cuiping Zhang	1305
EE405	Research on Corner Reflector Array Fitting Method for Ship Scattering Characteristics Tingting Jiang, Jinghong Luo, Ziyang Yu	1309

EE406	Design of X-band all Metal Transmit Array Tingting Jiang, Tao Sun, Mingjuan Cai, Ziyang Yu	1314
EE407	Research on Simulation Model of Ship Wakes on Rough Sea Surface Mingjuan Cai Ziyang Yu, Nan Bi	1318
EE408	Research on a simplified algorithm for large-scale microstrip antenna array Yu Ziyang, Cai Mingjuan, Lu Jiajun, Cao Bin, Qian Fan, Wei Xuhong	1322
EE409	Multi-label Image Transient Background Information Recognition Based on Graph Convolutional Network Yifan Kong, Wenyong Wang	1326
EE411	A Dual Coupling LCC-LCC Topology Based WPT System for Wireless Slip Ring Yingjie Yang, Xiufang Liu, Heng Zhang, Yingying Shi	1333
EE412	Design on Weak Supervision and Self-learning Spatiotemporal Data Annotation System for Large-scale Complex Scenes Fan Yang, Zhongwang Wu, Longwei Xu	1337
EE414	Meteorological Data Transmission Management System Based on Multi-source Satellite Data Zhanxian Li, Nan Ye, Yifeng He	1343
EE415	Design and Implementation of Epidemic Big Data Visualization Platform Based on Vue + Echarts Jianhua Xie, Zhongming Yang, Zhang Jun, Zhao Xi, Yifang Tang	1347
EE417	Mask Wear Detection Algorithm Based on YOLOv5m Xiao Zhenjiu, Chen Sihang, Su Ting	1353
EE418	Research on A Route Planning Method for Military Transport Aircraft Based on GWO Algorithm Jilong Lu, Xusheng Gan, Yanming Wei, Shenghou Li	1359
EE420	An oil painting image retrieval strategy based on feedback mechanism Shutong Wang, Songjie Gong	1365
EE422	Research on oil painting recommendation algorithm based on collaborative filtering Shutong Wang, Songjie Gong	1369
EE423	An Improved YOLOv5 Algorithm of Target Recognition Lei Hu	1373
EE424	Construction of domain knowledge graph based on open source intelligence Yahui Hu, Ling He, Xiao Tang, Gang Luo, Song He, Qiqing Fang	1378
EE426	Research on Image Analysis and Processing Technology Based on Big Data Technology Yahui Hu, Qiushi Xi, Lei Xiao, Qiqing Fang, Yamin Hu	1383
EE427	Decentralized observer based output tracking for linear time-invariant interconnected systems Zhengji Mao, Yenming Tseng	1387
EE429	Test Report of Power System Stabilizer (PSS) of the 2 nd unit in a Certain Thermal Power Plant Tiankuo Wang, Jia Huang, Longfei Yu, Qing Wei, Diyang Wang, Ping Zhang	1392

EE430	Image Recognition Technology and Digital Twin in the Power Industry Sai Wang, Yan Zhao	1398
EE433	Short-term Prediction of Multidimensional Data in Power System Based on CNN Xundong Gong, Wenjing Zhang, Li Jiang, Yuying Shi, Yingyi Liu, Yu Zhang, Qiu Miao	1402
EE434	Design of a Vessel Dynamic Location System Observer Using the Neural Network Jianqun Mei, Tao Zhong, Chuan Deng	1406
EE435	Analysis of ATC-type Stair Structure by Axonometric Projection Drawing Demo Fang Yuchu, Luo Huan, Yang Qian	1412
EE437	Research on keywords extraction technology in intelligent evaluation scheme for airport emergency plan Songhua Hu, Bolin Wang, Yanping Chen	1416
EE440	Fractional Fourier Transform Based Channel Estimation in Massive MIMO Systems Jingyi Peng, Yuhong Wang	1421
EE441	Thermal analysis and design of solar heat pump drying wheat system Kun Wang, Tao Jiang, Jianfeng Shi	1426
EE442	Blockchain-Based Supply Chain Financial Ciphertext Retrieval System Zhen Sun, Bo Liu	1431
EE444	Application of data storage management system in blockchain-based technology Xinyan Wang, Jingli Jia, Yuke Cao, Jiacheng Du, An Hu, Yong Liu, Zhiyong Wang	1437
EE445	ECLSTM: An Efficient Channel Attention-based Spatio-temporal Fusion Method for Fault Detection of Instruments Shangkai Dou, Zhihong Fan, Yunjie Yang, Jun Qin, Li Li, Yan Han	1441
EE447	Fault diagnosis method of fan bearing at non-extended end of motor based on resonant sparse decomposition and variational modal decomposition Junbo Huang, Wei Lin	1448
EE448	Research on Security Protection of Space-Earth Integrated Network Wireless Link Based on Consortium Blockchain Technology and Application Zhang Yang, Lin Shaofeng, Tu Chenyang	1455
EE450	Research on the fatigue detection method of operators in digital main control rooms of nuclear power plants based on multi-feature fusion Guangyu Liu, Jie Liu, Licao Dai	1459
EE451	Temporal Convolutional Knowledge Tracking Model with Embedded Graph Association Information Zhentao Zhong, Zhaohui Liu, Weifeng Gu	1464
EE453	Research on Risk Analysis of an Airport Based on QAR Data Xin Wang, Ming Liu, Xinbin Zhao	1470
EE455	A Chinese Implicit Sentiment Analysis Model Based on Relational Weighted Graph Convolutional Network Zuhua Dai, Qicheng Zhang, Zongquan Wang, Shilong Di	1475
EE456	Research on HDR Display Halo Evaluation Algorithm Based on Image Local Area Liu Yu, Cheng Haitao, Ye Yun	1483

EE458	An Optimized CNN-SVM Algorithm for UAV Anomaly Detection Wang Xiaowei	1488
EE459	Elastic-Net Regularized Online Portfolio Selection with Transaction Costs Xiaoting Yao, Na Zhang	1495
EE460	Model Research of Energy Storage Resources Participating in the Electricity Spot Market Yang Wu, Wentao Zou, Xinchun Zhu, Shuangquan Liu	1503
EE462	Research on voiceprint Recognition system based on ECAPA-TDNN-GRU architecture Cheng Haitao, Liu Yu, Ye Yun	1508
EE463	Research on azimuth-only passive location technology of UAV carrying formation based on Newton iterative algorithm Xiaoyan Wang, Ankun Quan, Caixia Hu, Yapeng Bi	1514
EE464	A simulation study of passengers with disabilities of security screening in airport based on AnyLogic Weijia Ye, Ning He, Jin Wang	1518
EE466	Distributed log collection for business processes based on ELK architecture Yize Zong	1523
EE467	A Multimodal Features Fusion Classification Method Based on Stockwell Transform and Deep Learning for Power Quality Disturbances Peng Zhang, Huipeng Chen	1530
EE469	Research on Data Communication Delay Prediction Method for Flight Simulators Based on ARIMA-LSTM Hybrid Model Geng Yu, Haojie Wang, Yuan Peng, Mingwei Tan, Jian Song, Jiguang Zhou	1535
EE470	Modeling and Simulation Design of New Energy Digital Trackless Train System Zesong Wei, Shuo Huang, Haoyu Lan, Weibo Li, Luchen Shan	1540
EE474	A Survey of Database Knob Tuning with Machine Learning Junhai Wang, Liqiang Liu, Cuixia Li	1545
EE475	Research on Key Technologies of Chinese Spelling Check Based on Machine Learning Yang Fan, Yang Bowen	1551
EE479	Survey of line selection algorithms for low current single-phase-to-ground fault Weirong Yang, Xiaohong Zhu, Yingfeng Guo, Panpan Li, Ping Gan	1556
EE480	Cloud API Oriented Analysis on Rolling Upgrade Dependability Zhihao Yu, Min Fu	1560
EE481	YOLOv5-based Object Detection for Food Freezer Warehouses Yandan Kong, Lixian Liu, Zhihong Liang, Yuxiang Huang, Fei Xiong, Mingming Qin	1565
EE482	Enterprise User Data Governance Based on Crawler and Text Similarity Jinyang Jiang, Fei Xiang, Xin Yin, Zheyu Zhang, Xiao Cheng, Pengyan Kuang	1571
EE484	Combining Forecasting and Multi-Agent Reinforcement Learning Techniques on Power Grid Scheduling Task Cheng Yang, Jihai Zhang, Fangquan Lin, Li Wang, Wei Jiang, Hanwei Zhang	1576

EE485	Research on Air Conditioning Energy Consumption Simulation and Optimization Strategy Based on TRNSYS Xin Zhang	1581
EE487	Research on Anti-Obscure Target Tracking Method Based on Feature Adaptive Fusion Cui Liqun, De Shiqi	1588
EE489	Production model based on the combined prediction of time series and XGBoost neural networks Banxiang Duan, Jingyu Zhang, Zhaobin Zeng	1593
EE492	Research on Nondestructive Testing Technology of Grounding Network Jianbiao Shou, Ping Fang, Min Xu, Jianchen Chen, Shan Zhu	1599
EE493	Research on Simulation Model of Explosion Impulse Noise Xingyu Liu	1606
EE495	Short-term power load forecasting based on similar day selection and improved LSTM Ziyu Zhou, Hongyu Chen, Wenwu Wang	1610
EE496	Visual Local Path Planning Based on Deep Reinforcement Learning Xuanru Shen	1616
EE498	Pursuit-escape Strategy for Autonomous Agents Han Cai	1622
EE500	Comparative study on model based test of automotive automatic control system Zhenhua Gao	1628
EE501	Matching Analysis of Four-Wheel Drive Pure Electric Power System Based on Adhesion Coefficient Jiashuai Li, Tian Yang, Zilong Wang, Songmao Wei, Peiliang Yu, Guiying Ren	1633
EE502	A Review of Point Cloud Registration Methods Based on Laser SLAM Boxiang Wang, Jianggui Han, Jianing Huang	1639
EE504	Research on intelligent storage monitoring of power grid based on YOLOv5 converged attention Tu Xiaodong, Gao Zhan, Wang Liujun, Wang Yong, Chai Lianxin	1643
EE506	Detection of bolts and nuts of automobile sheet metal parts based on YOLOV7 Yanshun Zhang, Jian Miao, Changying Liu	1648
EE507	Research on Digital Media Tourism Publicity System under Computer Big Data Technology Li Yong, Xiong Dan	1652
EE508	Optimization of Vehicle Blind Zone Monitoring (BSD) Evaluation Scheme Based on Image Processing and Radar Ranging Algorithm Zhang Boxu, Zhang Cheng, Zhu Libin, Lin Meixia	1657
EE510	Research on Advanced Adaptive Cruise Control (ACC) Testing Algorithm and Scenarios Li Weijian, Xia Minghui, Yang Xiaoyong, Lv Jianqiang	1663
EE512	Research of Automotive Ethernet Media Dependent Interface (MDI) Designing Xu Wenchen, Zhu Libin, Zhang Zhipeng, Ji Huating	1671

EE513	Research on Security Sandbox System Based on Computer Big Data Hyperledger Fabric Blockchain Platform Wei Tong, Feng Qiu	1675
EE515	A New Porosity Prediction Method Based on Deep Learning of TabNet Algorithm Zhixin Liu	1681
EE516	Analysis and Research on Safety Protection Risks of Intelligent Power Terminals Hao Chen, Bin Xu, Feng Zhai, Bo Gao	1686
EE518	AC fault ride through control strategy for hybrid HVDC system considering renewable energy consumption Fan Feng, Yu Lu, Chenjun Yang, Huixu Xiao, Changxin Meng, Jiachen Wang	1690
EE519	LGA-based short-term power load time series forecasting Xinmei Li, Jingxia Wang, Ran Tian	1695
EE521	Edge Cloud Manufacturing Service Platform and the Resource Allocation Optimization Method Siyu Ruan, Zequn Zhang, Dunbing Tang	1699
EE523	Research on Chip Level Inspection and Maintenance System of Electronic Products under Computer Digitization Huifen Sun	1704
EE525	Simulation Research of AEB System Based on Virtual Scene Zhou Zhuxin, Tian Yongjun, Lin Meixia	1709
EE526	Design of GIS Based Mobile Data Acquisition System for Agricultural Green Development Yuling Li, Chen Zhang, Li Tian	1716
EE529	Research on Sports Video Image Teaching System Based on Computer 3D Technology Weiqiang Zhang	1721
EE530	Research on EEG signal emotion recognition based on improved GAPSO-SVM Junqiang Peng, Ruige Liu	1726
EE531	Navigation and obstacle avoidance technology for warehouse tracking AGVs based on multi-sensor information fusion Naiwen Zhang	1730
EE533	Analysis of simultaneous localization and mapping technology for mobile robot based on binocular vision Ziheng Xue	1735
EE534	Research on optimal route planning and delivery strategy of multiple robots using HCA algorithm in a restaurant Zijing Wang	1740
EE536	Research on real-time path planning and obstacle avoiding for mobile robot swarms based on an advanced artificial potential field method Binglong Bao	1747
EE537	Research on Multi-AGVs Cooperative Transportation Strategy in Warehouse Logistics Environment Based on HCA Algorithm Yuanzhuo Li	1753

EE540	Research on trajectory tracking control algorithm in 4WS mode Xingqiao Wang, Shuai Wang	1759
EE541	Design of Track Tracking Controller for Tracked Car Based on Pure Tracking Algorithm Zhao Yifu	1765
EE542	Design and fabrication of the power generation floor based on the mechanical conversion method Yiqiu Zheng	1771
EE544	Research of high voltage permanent magnet synchronous frequency converter Wang Lei	1776
EE545	Computer Simulation Analysis Applied in Intelligent Lightweight Sorting Manipulator Tao Yang, Xiaohua Li	1781
EE546	Analysis of energy storage operation and configuration of high-proportion wind power system Yiyue Du	1785
EE549	Study on Wind Power Prediction Based on EEMD-LSTM Rongqing Cai, Wei Liu, Zimo Zhu	1791
EE550	Research on proportional parameter of random propagation algorithm with noisy labels Zixuan Guo	1797
EE552	Research on vehicle detection algorithm based on improved YOLOV5 Songyu Deng, Zixuan He, Meng Niu	1802
EE553	Research on Short-term Voltage Stability with Dynamic Load and Short-circuit Location Zhiliang Dong, Xuebing Lu, Jifei Wang, Ziyang Qin, Tianyu Xing	1806
EE555	A high available and strong generalization capability data-driven-based wireless fingerprint positioning model Xiaochong Wu, Minxun Hu, Ganrong Dong	1812
EE556	Aircraft Trajectory Prediction Based on Residual Recurrent Neural Networks Zhonghang Fan, Junqi Lu, Zhanghao Qin	1820
EE558	Intelligent control system of waste gas treatment based on Internet of Things Qin Xu, Zeliang Liu, Dong Chen	1825
EE559	Design of restaurant intelligent seat-seeking system based on ESP32 Tianqi Ying, Dingkun Zhu, Yang Zou, Yingjie Huang, Peisen Zhao	1828
EE560	Design and Realization of SCM Network Based on a New Symmetry Array with Five Feed Sources Yang Liu, Jing He	1835
EE562	Analysis on the Deterioration of the Withstand Voltage Level of HVDC Thyristors Huadong Cui	1839
EE563	Aggregation test of public power load under peak power Fugen Men	1844

EE566	Algorithmic Study of Gibbs Sampling Selection Based on Information Criterion Shaojun Shang, Yunna Liu, Rui Wang, Rui Cao	1849
EE567	Discussion on the setting of double-density magnetic recording belt speed for high-orbit satellites Liu Yang, He Jing	1855
EE571	Research on a shipborne ionospheric scintillation detection method Jian Zhou, Xingcun Wu, Guangzhi Wu, Yonghe Su	1858
EE573	Analysis and examination of instrumentation tape recorder's flutter and time base error Liu Yang, He Jing	1862
EE576	Research on a network covert channel based on blockchain Jinze Du, Leixiao Li, Xiao Xiong, Tieming Niu	1865
EE582	Gesture Recognition Technology Based on Depth Convolutional Neural Network Haoyun Wei	1869
EE583	A Real-time Logistics Scheduling Method of Digital Twin Workshop Yizhe He, Zequn Zhang, Dunbing Tang	1874
EE585	Research on EMC simplified analysis method of coupling communication cable between EMUs Yang Liu, Yijing Sun	1878
EE587	Research on Simple Power Consumption Based on AES Algorithm Cheng Zhang, Yunhui Jia, Libin Zhu, Zhipeng Zhang	1883
EE588	Research on a comprehensive evaluation method based on multi-indicator solitary network frequency control strategy Li Dexin, Chen Jingyi, Wang Wei, Gao Song	1887
EE590	Research on Fruit Recognition Method Based on Improved YOLOv4 Algorithm Chao Yi, Weihao Wu, Liu Yang, Ruichang Jia	1892
EE593	Application Research of Computer Virtual Reality Technology in Digital Media System Design Zhe Wang, Changyong Zhu	1902
EE595	Firewall Technology Strategy Analysis and Application Research Renshan Liu	1907
EE596	Research on Efficient Parallelization of Spectral Clustering Algorithm Based on Big Data Chaoyue Wei	1912
EE598	Speech Emotion Feature Extraction Method Based on Improved MFCC and IMFCC Fusion Features Zhongqing Wang, Jinghua Yan, Yifan Wang, Xinran Wang	1917
EE599	Network Log Big Data Analysis Processing Based on Hadoop Cluster An Ning	1925
EE600	Application Research of Computer Network Technology in Electronic Wireless Transmission Weiti Lv	1929

EE601	Research on Network Application Automation System Based on Computer Artificial Intelligence Technology Weiti Lv	1934
EE603	Research on glass relics based on machine learning Jiaming Zhao, Zifan Zheng, Chen Fang, Yuxin Huang, Bei Zhang	1939
EE604	The Comparison and Analysis of Autonomous Food Delivery Robot Based on Artificial Potential Field and Breadth-First Search Methods Ruoxi Wang	1943
EE606	Research on Multi-robot Material Picking and Autonomous Path Planning System in Industrial Environment Zhiyao Jiang	1948
EE607	Analysis of Cultural Group Communication Behavior Based on Deep Belief Network Algorithm Wenting Mi	1953
EE608	Research and Application of Archive Data Management System Based on Blockchain Lin Yang, Shang Fang, Liu Sheng, Li Dandan, Song Hangxuan, Wang Yingying, Liu Nan, Chen Xin	1958