2020 IEEE International Conference on Advances in Electrical Engineering and Computer Applications (AEECA 2020)

Dalian, China
25 – 27 August 2020

Pages 1-535

IEEE Catalog Number: CFP20W83-POD
ISBN: 978-1-7281-6522-6

Copyright © 2020 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: CFP20W83-POD
ISBN (Print-On-Demand): 978-1-7281-6522-6
ISBN (Online): 978-1-7281-6521-9

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

Table of Contents

PID	Paper Information	Page
EA001	Research on Industrial Data Desensitization Algorithm Based on Fuzzy Set Ting Bi, Xuehong Chen, Jun Li, Shuaifeng Yang	1
EA002	No-reference Image Quality Assessment Based on Ensemble Convolutional Neural Network Wan Qian, Qingbing Sang	6
EA005	Sector Free and Sub-Connected Precoding for Millimeter Wave Massive FD-MIMO Systems Shah Marjan, Asfandyar Awan, Mazz Mohammad Butt, Ziwei Yan	11
EA006	Research on Adaptive Synchronous Control of Dual Motors Based on Neurons Zefeng Huang, Heng Wan, Fuzhi Jin, Mengxu Gu	17
EA007	Research on Technology of Embedded System Security Protection Component Wei Liu, Haihang Niu, Weifeng Luo, Wei Deng, Haitao Wu, Shanglin Dai, Zhongwei Qiao, Wei Feng	21
EA009	A study on the classification of left - and right-handed eeg signals based on motor imagination Ye Yu	28
EA010	Research and application of 3D laser scanning technology in reversed modeling of hydropower station Wenhui Liu, Yuanlin Luo, Guicheng Yang	32
EA012	Quantitative Research on Radar Countermeasure Environment Complexity and Software Simulation Yangyong Wu, Wenhai Li, Weichao Sun, Bingzhen Li	37
EA013	Application of waveform and data flow analysis in engine sensor fault determination - a case study of Volkswagen B7 engine Bingxian Li, Shengbo Zhou, Donglei Zhang	45
EA014	Modeling Information Propagation Driven by Attraction and Drag on Complex Network Jun Cao, Fuzhong Nian, Yabing Yao	49
EA016	Text Sentiment Analysis Network Model Based on Self-attention Mechanism Feitian Li, Ying Yi, Xiaoyu Tang	56
EA017	The Life Cycle Integrated Management and Control Platform for Smart Hydropower Stations Yuechao Wu, Yuanlin Luo, Bo Zheng, Zhenqiu Feng, Huiliang Shen, Jiong Lu	61
EA019	Rate-Splitting Multiple Access Based Coordinated Multi-Point Transmission in Multi-Service Network Kejia Chai, Lihua Li, Jilong Li	66

EA020	Energy Efficient Transmission Design for Multicell Downlink with Per-Antenna Power Constraints Xiufeng Jin, Jing Liu	**71**
EA021	SDN-based traffic scheduling scheme for energy storage data center based on differential algorithm and congestion degree Li Peizhe, Liu Chaoqun, Yang Kai, Zhang Mingjie, Gao Fei, Xu Jingwen, Zhang Yunwei	**75**
EA022	Cooperation Regulation for HAPF and PV Converter in Microgrid Yu Botao, Li Peng	**81**
EA026	YOLO Based Recognition Method for Automatic License Plate Recognition Waqar Riaz, Abdullah Azeem, Gao Chenqiang, Zhou Yuxi, Saifullah, Waqas Khalid	**87**
EA027	Extreme trees network intrusion detection framework based on ensemble learning Xiujin Shi, Yifan Cai, Yang Yang	**91**
EA028	Design and Development of a Telemetry Wave Meter Yang Zhou, Yu Yu, Wei Cai	**96**
EA029	Research on Global Optimization Scheduling Method of High-speed Railway Emergency Resource Based on Service Pool Li Ping, Wang Pu, Zheng Jinzi	**100**
EA030	Design of data acquisition system of electric meter based on ZigBee Wireless Technology Yang Yongyong, Han Chenghao	**109**
EA031	Restaurants' Rating Prediction Using Yelp Dataset Yifan Chen, Fanzeng Xia	**113**
EA032	Intelligent Management and Control System of Polluted Site Remediation Based on Internet of Things Peiye Sun, Baofeng Zhang, Rui Tian, Junchao Zhu	**118**
EA034	Research on Evaluation Technology of Pavement Roughness Based on Smartphone Peng Zhang, Jianping Huang, Shasha Chen	**123**
EA035	Research on the prediction algorithm about the number of workers returning to work based on the COVID-19 Bingtao Gao, Zhengang Zhai, Lei Wang, Zhiyuan Pan, Song Xu, Dan Liu, Yijia Hu, Junyan Wang	**127**
EA037	Application of dynamic decision method for automatic allocation of address in airport IoT node- device Ning He, Yingyang Yu, Weijia Ye	**132**
EA039	Cloud Workflow Task and Virtualized Resource Collaborative Adaptive Scheduling Algorithm Based on Distributed Deep Learning Delong Cui, Jianpeng Lin, Zhiping Peng, Qirui Li, Jieguang He, Yiheng Yuan, Mian Guo	**137**
EA040	Design of fire alarm system with automatic position Chen Xinhao, Wang Siqi, Han Chenghao	**141**

EA042	A Self-Adaptive Preferred Learning Differential Evolution Algorithm for Task Scheduling in Cloud Computing Xiujin Shi, Xiaowang Zhang, Mintao Xu	**145**
EA044	Controller Cluster Optimization and Simulation of Satellite Network in Naval Battle Circumstance Wei Luo, Xiaopeng Wang, Min Wang, Hao Tao, Jing Wu	**149**
EA045	Research on Mongolian-Chinese Machine Translation Based on Generative Method Ziyue Guo, Hongxu Hou, Nier Wu, Shuo Sun	**154**
EA046	Fine-grained Dynamical Speech Emotion Analysis Utilizing Networks Customized for Acoustic Data Yaxiong Ma, Jincai Chen, Ping Lu	**158**
EA047	A Methodology of Determining Weight Ratios of Different Question Types Based on Back Propagation Neural Network Shengnan Cao, Yan Zhong	**164**
EA049	Design and Development of a 7 mm Band Receiver Kai Wang, Liang Cao, Jun Ma, Maozheng Chen, Xuefeng Duan, Yang Wang	**169**
EA051	FSRF:An Improved Random Forest for Classification Wenxian Feng, Chenkai Ma, Guozhang Zhao, Rui Zhang	**173**
EA053	Development of data acquisition system for CNC machine tools Xueguang Li, Wenguang An, Huizhong Hu, Penghui Li, Xinghe Jiang	**179**
EA054	Research on Mongolian-Chinese Machine Translation Based on Dual-Learning Shuo Sun, Hongxu Hou, Nier Wu, Ziyue Guo	**183**
EA058	Chinese Sign Language Key Action Recognition Based on Extenics Immune Neural Network Yue Sun, Tiantian Yuan, Junfen Chen, Rui Feng	**187**
EA059	STM32-Based Platform for Testing Energy Storage Lithium Battery Jizhong Chen, Peijun Qin, Zheng Li, Yanbo Che, Yibin Cai	**192**
EA060	A Novel Distributed Anomaly Detection Algorithm for Low-density Data Lin Mei, Fengli Zhang	**197**
EA061	CASE-A Conditional Adaptive Scalable Expert Structure for Classification Chenkai Ma, Wenxian Feng, Guozhang Zhao, Rui Zhang	**202**
EA062	A Robust Automatic Meter Reading System based on Mask-RCNN Abdullah Azeem, Waqar Riaz, Abubakar Siddique, Saifullah, Umar Ajaib Khan	**209**
EA063	Mobile Terminal Implementation of Image Filtering and Edge Detection Based on OpenCV Jinshu Bai, Yicen Li, Lan Lin, Lixin Chen	**214**
EA065	Research on Data Augmentation for Object Detection Based on X- ray Security Inspection Picture Yin Luo, Ligu Zhu	**219**

EA066	Research on Autonomous and Controllable High-performance Consensus Mechanism of Blockchain Yang Chengfu	**223**
EA067	High Voltage Generation and Ripple Suppression Design of 22kV Switching Power Supply Kou Genqiang, Zhang Jinling	**229**
EA068	Text Sentiment Classification Based on Attention Mechanism and Decomposition Convolutional Neural Network model Dong Cao, Yujie Huang, Hui Li, Xu Zhao, Haibo Chen, Yunbin Fu	**234**
EA075	Geoacoustic parameter inversion from ship radiated noise using the structure similarity of dispersion curves Wenpeng Qu, Xiang Pan	**239**
EA076	Data-to-text Generation with Pointer-Generator Networks Mengzhu Liu, Zhaonan Mu, Jieping Sun, Cheng Wang	**244**
EA077	A novel tree-topology based routing algorithm for partially-trusted QKD networks Xi Chen, Gonghua Hou, Xinyi Lin, Jianxiong Huang, Qing Yang, Kangjie Chen, Ruyin Chen	**252**
EA079	Decision-Making in Machine Learning Guanwei Huang, Mavin Buss	**256**
EA080	A robust CNN model for handwritten digits recognition and classification Saqib Ali, Zareen Sakhawat, Tariq Mahmood, Muhammad Saqlain Aslam, Zeeshan Shaukat, Sana Sahiba	**261**
EA081	Asymmetric convolution kernel for deep optical flow estimation Yueran Zu, Wenzhong Tang, Xiuguo Bao, Yanyang Wang, Shuai Wang	**266**
EA082	Design and Improvement of a Non-contact low Frequency RFID Card Reader Wang Xueyao, Zhang Jian	**271**
EA083	Evolving from Traditional Systems to AIOps: Design, Implementation and Measurements Shijun Shen, Jiuling Zhang, Daochao Huang, Jun Xiao	**276**
EA086	The Executors Scheduling Algorithm for the Web Server Based on the Attack Surface Guanglai Nie, Zheng Zhang, Yufeng Zhao	**281**
EA088	Tracing Method for Electronic Snapshot System of Black Smoke Vehicle Yao Yao, Jiajing Liu, Yu Liu, Yang Wu, Zijun Guo	**288**
EA089	Research on Workflow Rule Engine Based on Process Manager Screening Tian Yali, Zhang Zheng, Bian Dezhi	**293**
EA090	Detection of Spinal Fracture Lesions Based on Improved Yolo-tiny Gang Sha, Junsheng Wu, Bin Yu	**298**
EA091	Factory Energy Data Imputation by Nearest Neighbor Search with Clustering Yihao Ang, Yongan Qian, Siyuan Gao	**302**

EA093	A Generic Variable Inputs Quantum Algorithm for 3-SAT Problem Ping Wang, Guangqiang Liu, Liyan Liu	**308**
EA094	Simulink Model of High-Speed Train Pantograph-Catenary Offline Arc Lin Yuwen, Feng Qingpeng, Liu Yining	**313**
EA096	EEG Signals Denoising Using Bayesian Estimation Jiahe Guo, Hongxv Wang, Chenjie Zhang, Xuemei Bai	**317**
EA097	The Architecture of Micro-services and the Separation of Frond-end and Back-end Applied in a Campus Information System Yifei Gong, Feng Gu, Kengbin Chen, Fei Wang	**321**
EA099	Research on Three Picking Arm Avoidance Algorithms for Agaricus Mushroom Picking Robot Bocai Jia, Shuzhen Yang, Tao Yu	**325**
EA100	Construction of Classification Model for Product Quality Incidents Based on Dual Membership Fuzzy Support Vector Machine Yingcheng Xu, Haiyan Wang, Ruyi Ye, Ya Li	**329**
EA103	A Multilevel Computing Model of Internet-related Markets Evolution Wentao Liu, Hao Li	**332**
EA106	Magnetic Field Simulation Analysis of New Type Coil-type Axial Magnetic Li Xiaozhao, Zhang Yang, Wang Yuhao, Ji Lei, Wang Zhengqi	**337**
EA107	Mass spectrometric analysis of one-time tube sealing and exhausting of 72.5kV vacuum interrupter Qi Dacui, Xue Congjun, Qi Chunwei, Zhai Shen, Wang Yuhao, Wang Zhengqi	**341**
EA110	Damage evaluation of microwave anti swarm attack based on scoring method Qiyu Liu, Jun Wang, Yinhua Jun	**345**
EA111	Optimal Fractional Order PID Controller Design for AVR System Based on Improved Genetic Algorithm Jiake Sun, Lifei Wu, Xiaozhong Yang	**351**
EA112	A Forwarding Secrecy Based Lightweight Authentication Scheme for Intelligent Logistics Xueping Zhu, Yanxing Li, Yuan Lei	**356**
EA114	Design and Implementation of Embedded Cloth Edge Detection System Ran Cao, Bing Jiang, Dawei Tang	**361**
EA115	Coordinated Control Strategy of Source-Load-Storage Considering the Regulatory Ability in Market Environment Bangyu Yang, Yue Zhao, Zhiyong Gan, Wei Liu, Tianyi Yu, Jiang Bian	**366**
EA117	Short-Term Cost Forecasting of EV Battery Using LSTM Network Waqas Khan	**372**
EA118	Research on Decision Making Technology for Maintenance Cycle of Operating Vehicle Components Xiaojuan Yang, Fujia Liu, Shuquan Xv	**377**

EA119	Influence of Capacitor Voltage Transformer's Transient Response on Commutation of HVDC Transmission System Zhao Dandan, Cao Yilie, Gu Danzhen, Zhao Sanshan, Liu Chenlei	**381**
EA122	A selective enhancement degree and non-uniform selection encoding algorithm for digital fountain code Yunfan Yang, Xiaofei Jiang	**389**
EA123	Modeling and Simulation of Pressure Control in High Pressure Fuel Engineering Xiaoming Xu, Jiawei Yu, Zhengyu Huang	**394**
EA126	Reliability Evaluation of Fuzzy Multi-state Systems Based on Stochastic Computation Meizhen Ma, Li Liang, Xiaogang Song	**400**
EA128	The Application of Underground Power Cable Anti-breakage Device based on Biological Perception Guangyuan Yao, Jun Lv, Jianer Wu, Ming Zhao, Chengzhu Wang, Fuping Li, Quanbo Miao, Jie Zhou, Mingquan Zhou, Jinlei Hou	**406**
EA129	Analysis of Electricity Consumption Behavior of Air Conditioning based on the Perspective of Power Demand Response Feixiang Gong, Ninghui Han, Lulu Zhang, Wenjun Ruan	**412**
EA131	Research on Construction Method of Digital Twin Workshop Based on Digital Twin Engine Luyao Xia, Jianfeng Lu, Hao Zhang	**417**
EA135	A PFC Converter With Low Ripple and High Efficiency Bing Quan, Gaili Yue, Zewu Huang	**422**
EA136	An Area-Efficient Decimation Filter on High Resolution Sigma Delta A/D Converter for Biomedical Signal Processing Lepeng Lin, Bo Gao, Min Gong	**427**
EA139	DPoC: Distributed Proof of Correctness for Blockchain in the Internet of Things Hang Yu, Pengbo Si, Gefan Wang, Yanhua Zhang	**433**
EA140	Classification of Mars Lineament and Non-Lineament Structure Based on ResNet50 Pengcheng Yan, Yanze Su, Xiaolin Tian	**437**
EA141	A Modified Stochastic User Equilibrium Based Back-Propagation Method of Transportation Network State Estimation Yan Chenyang, Yang Jiawen, Xu Jin, Wu Guangzhou, Lian Liping	**442**
EA142	Simultaneous estimation of individual coefficient, mean and covariance of origin-destination demands from day-to-day parking data and traffic counts Yan Chenyang, Yang Jiawen, Xu Jin, Huang Yongxian, Lian Liping	**448**
EA144	Research on Mobile Water Quality Monitoring System Based on Underwater Bionic Robot Fish Platform Chen Kai, Zhu Weiwei, Dou Lu	**457**
EA145	Design and test of FM radio positioning system for multi rotor UAV Zhang Xingxing, Zhang Wenhui, Xia Jianli	**462**

EA146	User Application Behavior Sequence Generation Xu Niu, Hongri Liu, Guodong Xin, Junheng Huang, Bin Li	**466**
EA149	IHF: Industrial High Frequency Operation Queue Discovery Algorithm Yuntong Guan, Guodong Xin, Yuliang Wei, Wei Wang, Bailing Wang	**470**
EA150	Network Security Situation Prediction in Software Defined Networking Data Plane Mingren Sheng, Hongri Liu, Xu Yang, Wei Wang, Junheng Huang, Bailing Wang	**475**
EA153	An Efficient Method of Casting Defects Detection Based on Deep Learning Lin Xue, Junming Hei, Xiangji Chen, Ying Xu, Licai Zheng	**480**
EA154	Compact Modeling of THZ Photomixer Made from GaN HEMT Yu Chen, Jin He, Yandong He, Yiqun Wei, Guoqing Hu, Chunlai Li, Xiaomeng He, and Huayu Kang	**484**
EA155	A Surface Potential Based Compact Model for GaN HEMT I-V and CV Simulation Yu Chen, Jin He, Yandong He, Yiqun Wei, Guoqing Hu, Chunlai Li, Xiaomeng He, and Rui Wang	**490**
EA156	Realization of Hydraulic Control System of Horizontal Rotary Forging Machine Zhang Rihong, Yang Songxia, Li Xiaomin	**496**
EA158	Stress Reliability Study of GaN HEMT Devices Aixi Zhang, Yandong He, Jin He, Yiqun Wei, Guoqing Hu, Chunlai Li, Guangjin Ma, and Rui Wang	**500**
EA159	Compact Modeling of Capacitance Components for GaN HEMTs Aixi Zhang, Yandong He, Jin He, Yiqun Wei, Chunlai Li, Guangjin Ma, Xiaomeng He, and Rui Wang	**505**
EA160	Efficient Privacy Preserving Decision Tree Inference Service Shengchao Ding, Zhenfu Cao, Xiaolei Dong	**512**
EA161	Design of a portable toxic gas monitor Yu Cong, Baofeng Zhang, Yunlong Xing, Junchao Zhu	**517**
EA163	Small object detection in aerial view based on improved YoloV3 neural network Fuyan Lin, Xin Zheng, Qiang Wu	**522**
EA164	An Efficient OpenGL-Based Image Processing Method on Radar Echo Data Kang Yingwei, Xu Ning	**526**
EA166	Modeling and Simulation for the Coupled Transmission Performance Between High-Frequency Microwave and Lightwave Na Sun, Degui Sun, Yue Han, Bruce Wessels	**531**
EA167	Goos–Hänchen and Imbert–Fedorov Shifts in the Guided Mode of the Silicon-on-Insulator Waveguide Zhuo Chen, Degui Sun, Tiancheng Li	**536**
EA168	Design of Mosquito Killers Based on Intelligent Lighting Control over Solar Energy and High-Voltage DC Li Kefeng, Yu Lijun	**541**

EA169	Design of Circuit Patrol Monitor Module Based on ARM Processor Yu Tian, Qilong Hu, Hua Liang, Lin Fan, Yanpeng Guo	**545**
EA170	Design and implementation of voice-controled intelligent fan system based on machine learning Jiawei Li, Yuanming Cheng	**548**
EA171	Analysis for the Dominant Factors to Determine the Correlation Length of Silicon Waveguides on a Rough Insulator Bin Wang, Degui Sun, Hongpeng Sang	**553**
EA172	Jamming Signal Detection Based on TSVD Method Xu Yang, Anping Li, Meiying Wei, Xiaofei Zhang, Sixue Lu, Wen Wang	**558**
EA173	Solution of ackley function based on particle swarm optimization algorithm Wei Cai, Li Yang, Yu Yu	**563**
EA174	Assessment for the Radio Frequency Exposure Worst Case of Multiple Antennas Based on Particle Swarm Optimization Yinfeng Zhou, Xuejun Zhang, Huirong Li	**567**
EA176	A Spectrum Handoff Method Based on Reinforcement and Transfer Learning Jiaxing Zhao, Wei Shao, Fuchang Li, Qisen Zhou	**572**
EA177	Planning strategy of multi-station integration for substations in power systems Yan Zhang, Chen Zhang, Ying Zou, Jing Chen, Lei Sun, Zhichao Yang, Chuanliang Xiao	**576**
EA179	Simulation Research on Vector Control Strategy with Feedforward Compensation of Doublly-fed Induction Generator Boning Yu, Ming Dong, Ming Ren	**582**
EA180	Comparisions on KNN, SVM, BP and the CNN for Handwritten Digit Recognition Wenfei Liu, Jingcheng Wei, Qingmin Meng	**587**
EA181	Generation Method of Hierarchical Pronunciation Font for Hearing-impaired Children Based on Artificial Intelligence Ziqi Xu, Weikang Zou, Deyu Lin	**591**
EA182	Traffic Classification Based on Graph Convolutional Network Xingguo Ji, Qingmin Meng	**596**
EA184	Design of a Measurement Error Calibration Device for Platinum Resistance Temperature Transmitter Xiaoqing Li, Haiying Dong, Huatai Chen	**602**
EA186	Partial Discharge Characteristics of Glass Fiber Reinforced Plastic at Low Temperature Zhibin Zhang, Ming Ren, Bo Song	**607**
EA187	Copyright Certificate Storage and Trading System Based on Blockchain Pengbin Han, Aina Sui, Tao Jiang, Chaonan Gu	**611**
EA188	Research and Implementation of Electric Marketing and Distribution Data Fusion Technology Based on Graph Database Junfeng Qiao, Aihua Zhou, Hongbin Qiu	**616**

EA189	An Improved ViBe Algorithm for Quickly Suppressing Ghosts Enjian Bai, Jiahui Zhao, Yun Wu	**621**
EA190	Multi-Agent Mean Field Predict Reinforcement Learning Shiyang Zhou, Weiya Ren, Xiaoguang Ren, Xiaodong Yi	**625**
EA191	Design and Simulation Analysis of Drill Pipe Holding Manipulator Ruoqi Zhang, Weiqing Li, Man Zhang	**630**
EA193	Vision Based Lane Detection for Self-Driving Car Ziqiang Sun	**635**
EA194	Research on and Application of Fault Disposal in Flexible Interconnection Distribution Network Sujuan Huang, Shuang Wu, Jiaqi Zhang, Baohua Sun, Tao Han	**639**
EA195	Max-Min Ant System Applied to the Ship Lock Arrangement Problem Ruijie Liu, Lin Li, Yu Bo, Lijuan Wang	**643**
EA196	Research on Optimization of Load Distribution in Power Systems Based on PSO Xingyi Li, Suqin Qian, Junjie Wang	**647**
EA198	Research and Application of Three-phase Power Flow Calculation in Distribution Network Yulin Zhang, Jiancui Zhang	**653**
EA199	Fault Diagnosis of Power Equipment Based on Infrared Image Analysis Chenxi Guo, Ming Ren, Changjie Xia, Ming Dong, Bin Wang	**659**
EA200	Intelligent Energy Saving System of Precision Air Conditioning in Data Center Room Feihu Hu, Qianli Ma, Xiaochun Hou, Jiawei Ye	**664**
EA202	Application of Kramers-Kronig Function in Analyzing Frequency Domain Dielectric Response of Oil-paper Jiacheng Xie, Ming Dong, Kaige Yang, Boning Yu, Yizhuo Hu	**670**
EA203	Mechanical Fault Detection Based on Pattern Recognition Jinze Li, Hui Dong, Qinrui Liu, Yue Yu	**675**
EA205	Study on the Characteristics of Electromagnetic Actuator VT-300 Chengwu Shen, Zhiqian Wang, Qinwen Li, Chang Liu, Shaojin Liu, Jianrong Li	**680**
EA206	Design of High Performance Image Acquisition and Processing Platform Based on DSP and FPGA Chenjun Yang, Mengwei Chen	**684**
EA207	Equilibrium Trading Strategy of Integrated Energy Systems Based on Non-cooperative Game Theory Jiangping Jing, Yi Wu, Wei Hu, Xuedong Jiang, Xiaobo Li, Chaoqun Wang	**689**
EA208	Research on Electricity Load Based on Deep Clustering Model Chunjie Zhu, Xiaohua Xu, Zhuping Liu, Jianyue Pan, Liqin Shi	**695**
EA210	The Application of Ensemble Learning on Named Entity Recognition for Legal Knowledgebase of Properties Involved in Criminal Cases Zongshen Jiang	**701**

EA211	Research on Predictive Control Based on Long-Short-Term Memory Network Chunyu Gao, Ming Xie, Wei Jiang, Ze Dong	**706**
EA213	Research on Dynamic Detection of Java Dependency Conflict Kefeng Pan, Yongzhi Wang	**711**
EA215	Risk Assessment and Auxiliary Decision-making of Power Grid under Extreme Weather based on Holographic Geographic Information Chunjie Zhu, Xiaohua Xu, Jianyue Pan, Bo Zhou, Liqin Shi	**715**
EA217	Onion Rotation: An Information-reserved Rotation Method to Augment Data in Image Recognition Pengcheng Ouyang, Shiqing Cheng, Haoran Ren, Linsong Xu	**720**
EA220	5G Military Application Scenarios and Private Network Architectures Jingjing Liao, Xinjian Ou	**726**
EA221	Research on Advertising Image Recognition Technology Based on Convolutional Neural Network Xiaomei Liu, Fazhi Qi	**733**
EA223	Handwritten Digit Recognition System Based on Convolutional Neural Network Jinze Li, Gongbo Sun, Leiye Yi, Qian Cao, Fusen Liang, Yu Sun	**739**
EA224	Research on the Method of Position Recognition of Titanium Alloy Pipeline Weld Cheng Wang, Ziyu Wang, Jizhou Liu, Mingli Ding, Yongqiang Li	**743**
EA226	Real-time Multidimensional Data Mining and Analysis Technology Based on Big Data Yuan Tian, Wen Ma	**747**
EA227	A Comparative Study on the Realization Methods of Computer Aided Design Facial Camouflage Qi Jia, Chenghao Ma, Liyan Zhu, Hao Xue	**753**
EA228	Design of Imitation Camouflage Pattern Based on Multi-Resolution Decomposition Qi Jia, Wenxin Zhu, Jun Liu, Yuji Gao	**758**
EA229	Experimental Study on Camouflage Effect Evaluation Based on Eye Movement Instrument Jia Qi, Gao Yuji, Yang Xin, Zhu Wenxin	**764**
EA231	Design and Camouflage Effect of Facial Camouflage Pattern Qi Jia, Hao Xue, Suhong Wang, Chenghao Ma	**768**
EA232	Investigation Concerning Power System Stability Peihang Zhang, Ping Chen	**773**
EA235	A Stream Clustering Algorithm of Self-Adaptive Method Liang Gu, Wanli Ma, Yi An, Dacheng Huang	**781**
EA236	Research on UAV Balance Control Based on Expert-fuzzy Adaptive PID Xusheng Hu, Juan Liu	**787**
EA238	Flow Prediction in Spatio-Temporal Networks Based on Deviation Correction Hybrid Model Tai Ma, Xin Feng, Chaoran Zhou, Xin Zhou	**790**

EA240	The Research for Recommendation System Based on Improved KNN Algorithm Bin Li, Sailuo Wan, Hua Xia, Fengshou Qian	**796**
EA241	On Route Design with Ant Colony Optimization Algorithm for Power Line Communication Network Wenyu Sun, Yanling Zhu, Le Li, Yuwen Qian	**799**
EA244	Improved SURF Feature Matching Algorithm Based on FAST Scale Area Huadong Sun, Liang Liu, Ronghui Wang, Xiaowei Han	**803**
EA245	A Comparative Study of Image Features and Similarity Measurement Methods in Cross-modal Retrieval of Commodity Images Baoxing Qiao, Zhipeng Fan, Ran Wang, Zhijie Zhao, Hongjie Zhang	**809**
EA247	Electron Heating Dynamics in Capacitively Coupled Plasmas Radio-Frequency Discharges at Low Pressures Lulu Zhao, Tagra Samir, Huizhen Yan	**817**
EA252	End-to-End Anti-Attack Iris Location Based on Lightweight Network Hongming Peng, Bingbing Li, Di He, Junning Wang	**821**
EA258	Research on the Application of Cloud Computing Technology in Urban Rail Transit Haigeng Tu	**828**
EA259	A Parallel Computing Framework for Cloud Services Aidong Fang, Lin Cui, Zhiwei Zhang, Congjiang Chen, Zhuang Sheng	**832**
EA277	Anomaly monitoring in high-density data centers based on gaussian distribution anomaly detection algorithm Lin Wang, Jun Yu, Lingpeng Shi, Shida Lu, Hengmao Pang, Haiyang Chen, Zhu Mei, Mingjie Xu, Lin Qian	**836**
EA278	Research on Early Warning Word Segmentation under Domain Corrector Model Chen Jingwen, Li Juan, Yao Wei, Chen Danping	**842**
EA279	Efficient Pre-diagnosis Approach for Rarkinson's Disease with Machine Learning Yuqi Qiu	**849**
EA282	Study of topic mining for microblog based on CBMB-HL model Huang Min, Li Ke	**853**
EA285	Design of a Novel Parallel and Self-adaptive Under-actuated Robotic Hand Xiaodong Zhou, Qiang Zhang, Jianfeng Li, and Yuan Kong	**859**
EA286	Research on Feature Extraction and Recognition Method of Underwater Acoustic Target Based on Deep Convolutional Network Peibing Wang, Yuan Peng	**863**
EA288	A Guided Wave Mode Selection Method in PFA tube for Ultrasonic Flow Measurement Zhang Hongbo, Cao Li	**869**
EA290	Nonlinear control combined with terminal angular velocity mode separation strategy of STATCOM Li Xiaocong, Yang Xiao	**873**

EA291	Text classification algorithm based on sparse distributed representation Yaxin Ran, Hongqi Han	**876**
EA292	A Food Safety Text Filtering Method Based on Text Classification Techniques Dong Zhe, Kang Yujia, Shao Ruoqi, Liu Zhenyi	**881**
EA293	Collaborative Filtering Based on a New Matrix Factorization Algorithm Yongjie Yan, Hui Xie, Li Ma, Huowen Jiang	**886**
EA296	A New Spatial Modulation Technology Based on Difference Equation Guo Pengcheng, Ren Bingyin, Zhang Yongxin, Niu Teng	**891**
EA304	Multi-Agent Deep Deterministic Policy Gradient for Traffic Signal Control on Urban Road Network Shuyang Li	**896**
EA306	A Summary of Research Results on the Acquisition and Application of Typical Navigation Parameters of Intelligent Ship Shi Pu, Guangfu Cheng, Tongkui Yu, Shuo Xu	**901**
EA309	A Standard Architecture of Agricultural Big Data for Deep Learning Xiaojun Cui, Zihang Gao	**908**
EA310	Research on Image Super Resolution Reconstruction Model Based on Deep Learning Yuhao Zeng, Sijie Peng, Shengyi Ruan	**912**
EA312	Research on the Method of Detecting the Rail Marking of Road-rail Vehicle Based on Image Enhancement Ma Jinrui, Pang Song, Wang Xuemei, Ni Wenbo	**918**
EA314	Development of prototype product of Vehicle Ad-hoc Network communication terminal Hui Xue, Momiao Zhou, Yan Wu, Zhizhong Ding, Chao Sun	**923**
EA316	Research of Indoor Localization Technology of Robot Based on Cosines Law Xu Yangyang, Yang Kefeng, Zhao Yan, Chen Ming	**929**
EA317	Research on LSB-based Digital Image Information Camouflage Algorithm Lin Wang, Jun Yu, Wu Weifeng, Feng Mei, Wenda Lu, Haiyang Chen, Mingjie Xu, Zhu Mei	**933**
EA319	Design Experiment of Spatial Dimension of Infographics in the Background of AR—Take the Beijing 2022 Winter Olympics as an Example Guo Yantong, Xia Bing, Xu Xiaofeng	**939**
EA320	Design experiment on tile pattern design and laying scheme with JavaScript Jiang Yi	**943**
EA321	Transplantation and optimization based on embedded binocular algorithm Rubing Bai	**948**
EA324	An Optophone Based on Raspberry Pi and Android Wireless Communication Ying Li, Junxin Cheng, and Xin Wang	**952**

EA325	Research on Tactical Intention Recognition Method Based on Probabilistic Network Ontology Language Zhen Lei, Peizhi Cui, Yanyan Huang	**957**
EA326	Intelligent marking system based on STM32 Boyong Cai	**961**
EA328	Image stitching algorithm based on combined feature detection Zhongke Zhang	**966**
EA332	Research on the Application of Augmented Reality Technology in TV Programs Lei Xi, Zaining Wang	**972**
EA333	Study of a Novel Broadband Via on Microwave Multilayer PCB Technique Qinghui Song, Jiancheng Liu, Xiaoming Li	**975**
EA336	An Image Reconstruction Algorithm of BF Burden Surface based on Compressive Sensing Wenhui Zhao, Weijing Kong, Liqiang Wang, Xiaochang Ni, Dun Liu	**978**
EA337	Machine proof of Equivalence between Axiom of Choice and Product Theorem of Standard Family Sets Hongwei Lv, Jia Liu, Yaoshun Fu, Wensheng Yu	**982**
EA339	Study on SVM-based Flame Recognition and Fire Warning for Cotton and Linen Warehouses Xinran Zhao, Shanshan Hao, Lei Guan, Yue Wang, Qianlin Zhao, Dongsheng Lv	**987**
EA344	Design and Development of Digital Twin System for Intelligent Motor Xia Jitong, Wang Lin, Zhou Yan	**991**
EA346	Teaching Quality Evaluation System for College Teachers Based on Artificial Intelligence Facial Expression Recognition Technology Jie Sun, Jinmeng Niu, Hang Zhang, Quanhai Zhu, Xiaohua Xu	**997**
EA349	Study on a Night Training Monitoring System For Weaponry Shicong Lin, Xudong Wang, Wenlong Hao, Mingming Guo, Fan Li	**1002**
EA350	Design of Intelligent Access Control System Based on DES Encrypted QR Code Yaoqiu Hong	**1005**
EA352	Trajectory Tracking of Manipulator Based on Iterative Learning Control Geng Xukun, Wang Lin, Zhao Zidong	**1009**
EA353	Research on Integrated Security Management and Control Technology of Big Data Information Platform in the Intelligent Community Based on 5G Chao Long, Xiulan Du, Donglin Wang, Wenxia Liu	**1016**
EA359	Analysis of Semantic Comprehension Algorithms of Natural Language Based on Robot's Questions and Answers Wendi Li	**1021**
EA362	Classification of Natural Language Semantic Relations under Deep Learning Xiaofang Liao, Zijiang Zhu	**1025**

EA365	Discussion and Analysis on the Application of Passive Network Model Based on APRIORI Algorithm and Time Series Dimensions Zipei Tan, Zinan Yang, Qu Luo	**1028**
EA366	Application to Optimal Control of Brushless DC Motor with ADRC Based on Genetic Algorithm Zishuo Yan, Yonghua Zhou	**1032**
EA367	Research for Bidirectional Path Planning Based on An Improved A* Algorithm Shengwei Liu, Yue Ma	**1036**
EA369	Wireless Propagation Scene Partitioning for Inland Waterway Jing Zhang, Changzhen Li, Jie Yang, Wei Chen	**1040**
EA370	A New Refraction/Diffraction Hybrid Eyepiece Design Lin Li, Jie Yu, Qiang Han, Xinyi Lv, Xiance Jiang, Mingxu Yang	**1045**
EA371	Multi-factor Stock Selecting Model Based on Residual Net and LSTM Deep Learning Algorithm Muhao Chen, Weixia Guo	**1049**
EA372	Simulation Analysis of Error Transfer in Assembly Process of Mechanical Meta-Action Unit Hongyu Ge, Tuo Wang, Baoqiang Liu, Yuan Liu, Manzhi Yang, Chuanwei Zhang	**1054**
EA375	Virtual Material Modeling and Vibration Reduction Design of Electron Beam Imaging System Yongling Fu, Hao Gui, Wanguo Li, Zeqi Wang	**1063**
EA377	Research on EHA Control Strategy Used in Tank Gun Xuelei Zhang, Yongling Fu, Zhenyu Gou	**1071**