2021 IEEE 4th International Conference on Information Systems and Computer Aided Education (ICISCAE 2021)

Dalian, China
24 – 26 September 2021

IEEE Catalog Number: CFP21CAQ-POD
ISBN: 978-1-6654-3106-4

Copyright © 2021 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved

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

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

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

IEEE Catalog Number: CFP21CAQ-POD
ISBN (Print-On-Demand): 978-1-6654-3106-4
ISBN (Online): 978-1-6654-4124-7

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
SE001	Design of Collaborative Control Scheme between On-chain and Off-chain Power Data Wang Weixian, Chen Ping, Pan Mingyu, Li Xianglong, Li Zhuoqun, He Ruixin	1
SE002	Deep Self-Supervised Learning for Oracle Bone Inscriptions Features Representation Bingxin Du, Guoying Liu, Wenying Ge	7
SE005	A multi-objective fog computing task scheduling strategy based on ant colony algorithm Jingjun Gu, Jiadi Mo, Ben Li, Yueqing Zhang, Wei Wang	12
SE006	Research on Variable Universe Fuzzy Control of Double-Loop Mode Buck-Boost Converter Based on Matlab Haoshen Li, Hongmei Xu, Ruihan Jiang, Linlin Zhao	17
SE008	A Multilayer Perceptron Neural Network Model for UAV Sensor Fault Detection Wang Xiaowei	22
SE010	Random time delay analysis of Nb_2O_5 and OTS memristors Zhong Ma, Hongqi Yu, Shiqing Zhang, Yi Sun, Jietao Diao, Dvaid Day-Uei Li	27
SE013	Data security management of logistics network based on blockchain technology Weisheng Wen, Jun Ma, Shuqin Liu	30
SE017	Research on Simulation-Based Reliability Index Demonstration Method for Software System Jing Wang, Wei He, Xiaomei Shen, Bojiang Liu, Xinyu Han, Longli Tang	35
SE020	Recognition of OBIC's Variants by Using Deep Neural Networks and Spectral Clustering Guoying Liu, Wenying Ge, Bingxin Du	39
SE022	Research on GAN-based Text Effects Style Transfer Yinquan Liu, Zhuang Chen	43
SE024	Influence of electromagnetic environment on CPFSK communication signal Hailong Ge, Lifei Geng, Zhifei Yang, Bingyin Ren	47
SE031	Design and implementation of coal handling control system in coking coal power plant Di Shuyu, Chi Huanyu	50
SE035	Use of MOOC and Digital Technologies to Study Effects of Liability of Foreignness on Venture Formation in Forced Immigration —Case Study of Refugee Entrepreneurship in Ethiopia Zahra Seyedeh Hejrati, Medhanie Gaim, Charles E. Eesley, Taarini Kaur Dang	54
SE039	Theoretical Research on the Charge Characteristics of Dust Particle Group Field Zheng Zhao	62
SE041	Self-supervised Visual Representation Learning for Fine-Grained Ship Detection Gang Li, Yuncong Lei, Lingyu Si, Changwen Zheng	67
SE042	Research on building extraction method based on surveillance images Yingming Xie, Jianhua Huang, Xiyan Sun, Wenjun Yin, Zhenghan Qiao, Yao Zhang	72

SE045	Keyword-fusion Pointer-Generator Network for Policy Text Title Summarization Ziyin Gu, Li Chen, Qingmeng Zhu, Lingbo Li, Zelin Zhang, Xin Zhou	78
SE052	Precharge Switch: A Strategy to Suppress the Inrush Current of High Voltage Capacitor Xingtong Chen, Yanfei Gong	82
SE055	Teaching Case Study on Educational Reform Based on Hierarchical Domain Knowledge Reconstruction Yabo Luo, Hongxi Teng	89
SE056	Experimental Teaching Platform Development for Topological Sorting Algorithm Education Yabo Luo, Hongxi Teng	94
SE057	MatMat: Matrix Factorization by Matrix Fitting Hao Wang	99
SE058	ZeroMat: Solving Cold-start Problem of Recommender System with No Input Data Hao Wang	102
SE059	Application of Predictive PI and Multiple Cascade Control in Ordering-cylinder Juchen Hong, Zhiping Fan, Zhengyun Ren	106
SE060	Research on Water Jet Fault Diagnosis Model Based on PNN Network Zhuohao Zhang, Ming Chen, Ziwei Ren, Wei Shi	112
SE061	A Multi-Agent Reinforcement Learning Framework with Recurrent Communication Module for Traffic Light Control Bo Qin, Wei He, Bin Zhang, Jingchen Li	117
SE062	A Vision Transformer with Improved LeFF and Vision Combinative Self-attention Mechanism for Waste Image Classification Yuxiang Guo, Di Cao, Wuchao Li, Shang Hu, Jiabin Gao, Lixin Huang, Zengrong Ye	122
SE063	Identification and Visualization of Zombie Enterprise Portraits -- Mining Short-time Series Features from the Perspective of Image Zhidong Huang, Yuxiang Guo, Di Cao, Chenrui Hu, Chenjun Ding	129
SE064	Two extraction methods for carbonate rock oolites based on image segmentation algorithm Yili Ren, Jia Liang, Siwu Luo	137
SE065	Multi-Scale Dynamic Convolution for Classification Yunlong Wang, Lu Yang, Yukun Li, Lei Fu	142
SE066	Structure optimization design of high frequency dynamic test instrument Linxuan Zhou, Yinglong Zhao, Anbin Yu, Ben Zhang	147
SE067	Research on Accurate Learning Evaluation for College Students Based on Big Data Technology Zheng Liu, Shanshan Gao, Jing Chi, Huijian Han	152
SE071	Tracking Control of Neural System using Adaptive Sliding Mode Control for Unknown Nonlinear Function Chunrong Xia, Irfan Qaisar, Muhammad Shamrooz Aslam, Lin Qiaoyu	157
SE072	Research on the Analysis Method of Combat Test System of Systems for Capability Generation Yanfeng Wang, Weiping Wang, Mu Lin, Tao Wang, Yifan Zhu, Yingying Zhu, Yuan Tan, Ping Liu, Xiaowei Wang	162

SE073	Virtual Service Failure Recovery Algorithm Based on Particle Swarm in IPv6 Networks Jianwei Li, Zhibing Zhang, Kaibo Zhou, Dan Luo	168
SE075	Temperature Prediction Using Gray Model Based on Data Open Platform Gu Ruijun, Li Wei	172
SE076	Flight Trajectory Prediction of General Aviation Aircraft Based on LSTM Model Biao Wang, Zhengang Zhai, Renhao Xiong, Bingtao Gao	176
SE077	A Direct Retrieving Facet Method of Measuring the Complex Mesh Surface Hao Wen, Zhiwei Xu, Xiaoming Zhang	181
SE079	Single Base Station Positioning for Robots Based on Multiple Sensor Fusion Yuanhao Ding, Lurong Jiang, Jiang Wu, Meng Li, Liwen Jing, Wei Li	185
SE080	Enhanced LoRaWAN RSSI Indoor Localization Based on BP Neural Network Kaiyu Lu, Yong Yue, Jieming Ma	190
SE082	Fast Action Recognition Based on Local and Non-local Temporal Feature Zhiang Dong	196
SE083	An Improved Pure Pursuit Algorithm for Tractor Automatic Navigation Fu Qiang, Liu Xiang, Liu Xueyin, Liao Gonglei	201
SE085	Design Consideration of Civil Aircraft IMA System State Management Function Yao Xi, Zhou Yefei	206
SE087	It is Time to Laugh: Discovering Specific Contexts for Laughter with Attention Mechanism Kaibin Xu, Junpei Zhong, Kristiina Jokinen	211
SE088	Simulation analysis of interference sound field of shunt high voltage reactor Zhenhuan Liu, Yulong Chen, Yuan Li	216
SE091	Analysis of vibration and sound field evaluation and simulation method of main sound source equipment in substation Zhenhuan Liu, Yuan Li, Rui Huang	220
SE094	Study on Forming Process of Stretch Forming Lattice Structure Wang Cheng, Li Jianhua, Lu Chenghui	224
SE096	Oracle Bone Inscriptions Extraction by Using Weakly Supervised Instance Segmentation under Deep Network Wenying Ge, Guoying Liu, Jing Lv	229
SE098	Communication Technology and Application in Internet of Vehicles Min Wang, Sinan Wang	234
SE100	A credible transfer method of cross-chain assets based on DID and VC Xiaoyi Wang, Weiwei Qiu, Lei Zeng, Hongkai Wang, Yiyang Yao, Dong He	238
SE101	Role-oriented Task Allocation in Human-Machine Collaboration System Ji Liu, Yunpeng Zhao	243
SE102	A Review of English Learning Based on Convolutional Neural Networks Liang Juntong	249
SE105	Tanh discrete estimate for all-opical neural network based on MZI Ruizhen Wu, Ping Huang, Jingjing Chen, Lin Wang, Yan Wu, Mingming Wang	252
SE106	Emotion Recognition Using Representative Geometric Feature Mask Based on CNN Shaosong Lin, Yong Yue, Xiaozhu Zhu	257

SE107	The co-evolution propagation model of information and epidemic based on positive and negative information game Yaqiong Wang, Liu Zhiqiang, Guanghui Yuan	262
SE109	Research and application of supervision mechanism for traction battery recycling based on big data technology* Chen Ping, Jiang Xiaotong, Li Longhui	268
SE110	Hierarchical Affinity Learning for Training Evaluation Biao Mei	272
SE112	Research on Intelligent Vocal Music Training System Based on Wavelet Transform Chen Nan	278
SE113	Research on Multimodal Human Behavior Recognition Based on Double Flow Network Xiaoyu Bao	283
SE114	Renewable energy Internet microelectronics technology for industrial demand Suyi Wu	288
SE117	Evolution and Application of Artificial Intelligence Art Design Based on Machine Learning Algorithm Cong Ye	293
SE118	Multimedia music teaching system based on collaborative recommendation algorithm Na Zheng	298
SE119	Spacecraft dynamics modeling and attitude control based on Path Planning Qingmu Ai, Hongwei Fan, Qian Wang, Shunli Li	303
SE123	Transient stability control system based on mapping cloud and online pre decision Xuhan Wu, Wentao Wang, Hong Wang	307
SE125	Research on Key Technologies of Large Data Smart Grid Based on Power Grid Operation Simulation Zhang Hong, Mao Wentao, Tang Yingzhi, Wang Guorong	311
SE126	Research on Bioengineering Algorithm Based on Deep Learning Neural Network Hanyu Wang	316
SE128	Research on Power Matching of Excavator's Electronically Controlled Diesel Engine and Electronically Controlled Hydraulic Pump under Different Working Conditions Tang Zhenzhou	320
SE129	High-precision time synchronization networking algorithm of 5G base station based on stochastic optimization Ye Lili	325
SE130	Research on Data Encryption Technology in Computer Network Communication Security Based on Genetic Algorithms Longkai Zhang, Xingquan Teng, Xuegang Ma, Ruize Wang	330
SE131	Research on Computer Network Information Security Protection Strategy and Evaluation Algorithm Based on Fuzzy Clustering Duan Jingbo	334
SE133	Research on algorithm of personal navigation system based on adaptive vector particle filter Shu Xu, Jiayu Liu	339

SE134	Research on Personalized Online Learning System Model Based on Internet of Things Technology and Data Mining Xiaosa Wang	344
SE135	Research on Computer Database Intrusion Detection Technology Based on Virtualization Technology Yuwei Yao	349
SE136	Research on Intelligent Manufacturing System Model Based on Programmable Logic Controller Tianshu Li, Chunyan Huo	353
SE139	Research on English Classroom Teaching System Based on K-means Clustering Algorithm in Modern Information Technology Environment Junling Yu	358
SE140	Research on the Construction of Educational Data Quality Model Based on Multiple Constraints Model Jinming Du	363
SE142	Research on Virtual Exhibition System Platform of Museum Based on VR Technology Yi Fu, Gengyu Li	368
SE144	Research on College English Assisted Instruction System Based on Data Mining Algorithm Xiaohui Wu	372
SE145	Illumination condition model system of exhibition hall design based on computer aided design Yi Fu, Haoting Zhang	377
SE146	Design of simulated stock forecasting trading system based on time series Mingchen Zhang	382
SE150	Natural language processing and information retrieval system based on BP neural network Zeyang Zheng	386
SE151	Analysis of network security and privacy security based on AI in IOT environment Mingde Chu, Yufei Song	390
SE153	Intelligent Grasping Method of Multi-joint Manipulator Based on Deep Learning Lihua Dai, Qingqing Shi	394
SE154	Research on the Application of Data Encryption Technology in Computer Network Security Based on Machine Learning Yufei Song, Mingde Chu	399
SE156	Research on tomography system for ultrasonic process of particle two-phase flow based on adaptive filtering Ruizhi Wang, Yuru Gao, Ming Zhang, Yiyang Sun, Hao Li	404
SE158	Research on a new dynamic model of power system investment decision based on differential evolution algorithm Wei Wen, Zheng Wang, Zhihong Gu, Xiaoxia Xing	410
SE159	Construction of college physical education course mode system based on data Peng Cao	415

SE161	Research on Application of Intelligent System Integration Based on Data Mining Technology Rongjian Zhang	419
SE163	Research on Shandong Province Teaching Resource Database System Based on Clustering Algorithm Haiyan Chu, Shuhang Jia	424
SE164	Design of security integrated monitoring system based on Internet of things Xinyu Sun, Yangshuo Zhang, Rui Liu	429
SE166	Research on Intelligent Algorithm of Brushless DC Motor Control System Based on Fuzzy Neural Network Xinyu Sun	433
SE167	Research on Fault Diagnosis of Electrical System of Medium Transport Aircraft Based on Machine Learning Algorithm Jingjin Mu	436
SE168	Construction of Business English Subject System Based on Data Mining Algorithm Deng Bowen	441
SE170	Research on Web Data Mining Strategy Based on Cloud Computing Chen Ronghua, Yang Bei	446
SE173	Research on Low Voltage Does not Power Cut Operation Refined Collection of Line Loss Data in Distribution Network Lu Jizhou, Rao Jixian, Hu Ran, Yu Wen, Zhu Xuncan	450
SE175	A model of information sharing based on isolated information system Zhou Bin	455
SE176	Dynamic Programming Inspired Global Optimal Path Planning for Mobile Robots Jing Ren, Xishi Huang	461
SE177	Data Encryption Mechanism for Power Internet of Things Based on Data Characteristics Xiuming Yu, Ping Zhou, Shaoyong Guo, Zijian Chang	466
SE180	Research on the Influence of Dehazing Algorithm on YOLOv3 Target Recognition Xiaozheng Zhang, Zhe Jiang, Wei Guo, Xuebing Ren	471
SE185	Network Resource Backup Algorithm Based on Multi-Attribute Analytic Hierarchy Process in IPv6 Networks Xiaoyu Wang, Xu Lu, Zhonghua Liang, Gang Liu	476
SE187	Research and simulation of path estimation based on extended kalman filtering algorithm in video image Tang Cundong, Wang Zhiping	482
SE188	Research on Smart Agriculture IoT System Based Heterogeneous Networking Technology Yang Lu, Jia An, Shukai Shi	485
SE189	The Method of Information Communication of Online Social Network Based on Communication Algorithm Junying Chen	489
SE190	Research on Task Scheduling of Network Computing Environment Based on Parallel Computing Shu Yang	494

SE191	Inverter Fault Diagnosis Based on PNN Neural Network Weihao Zeng, Jidong Xu	498
SE193	Analysis of Intelligent Information Security Risk Assessment Based on Decision Tree Zhixuan Xiao, Shihua Pan	506
SE196	Design of the Information Security System Based on the Encryption Mechanism Shihua Pan, Zhixuan Xiao	510
SE198	Design of Small Unmanned Aerial Vehicle Navigation Algorithm Based on Control PID Wenqi Wu	514
SE200	Research on Model of Seismic Anomaly Data Mining Based on Neural Network Yancheng Long, Jian Rong	518
SE202	Study on the Construction Method of Requirement Knowledge Atlas Based on Graph Neural Network Fei Wang, Shuo Wang, Qing Tang, Yongjie Du	523
SE204	Research on Machine Vision Technology of High Speed Robot Sorting System Based on Deep Learning Shengqiang Bao	529
SE205	Design and Implementation of Artificial Intelligence Image Detection System Based on Plane Features Ruibin Wang	533
SE207	Construction of Computer Mega Data Security Technology Platform Based on Machine Learning Zhangrong Liu	538
SE209	Research on Pre-training Model of Natural Language Processing Based on Recurrent Neural Network Haotian Liang	542
SE210	Design of CNC Feed Servo System Based on Fuzzy PID Huang Jinyang, Fang Yamin	547
SE211	Interactive multimedia Network teaching evaluation based on object segmentation algorithm Xiaocheng Gao, Yannan Mu	551
SE213	Research on High Speed Robot Sorting System Based on Machine Vision Technology Jiawei Dong, Qingpeng Han	554
SE215	Research on Unstructured Mega Data Analysis Algorithm of Communication Network Based on Feature Fusion Gang Chen	559
SE216	Research on Project Management Algorithm of Computer Information System Integration Based on Quality Information Integration Pan Huiping	563
SE218	Construction of Smart City Information System Based on Cloud Computing and Internet of Things Technology Yu Lei, Lu Zhang	567