2021 7th Annual International Conference on Network and Information Systems for Computers (ICNISC)

ICNISC 2021

Table of Contents

Preface ..... **xxiv**
Committee List ..... **xxv**
Keynote Speakers ..... **xxvii**

Session 1: Computer Network and Information Security

UIAE: Collaborative Filtering for user and Item Based on Auto-Encoder 1
Hang Zheng (Bohai University, Jinzhou, China), Xing Xing (Bohai University, Jinzhou, China), Qiuyang Han (Bohai University, Jinzhou, China), Mindong Xin (Bohai University, Jinzhou, China), and Yong Niu (Bohai University, Jinzhou, China)

On the Security of Privacy-Preserving Cross-Domain Authentication and Data Deduplication Protocol 7
Jianhong Zhang (North China University of Technology, China), Zian Yan (North China University of Technology, China), Menglong Wu (North China University of Technology, China), and Qijia Zhang (North China University of Technology, China)

Semantic Face Completion Based on DCGAN with Dual-Discriminator 10
Xiuhong Yang (Xi'an University of Technology, China), Peng Xu (Xi'an University of Technology, China), Haiyan Jin (Xi'an University of Technology, China), and Jie Zhang (Xi'an University of Technology, China)

A Cyber Security Risk Assessment Methodology for CBTC Systems Based on Complex Network Theory and Attack Graph 15
Fan Zhang (Beijing Jiaotong University, China) and Bing Bu (Beijing Jiaotong University, China)

Application of Improved Region Growing Algorithm in WSNs Data Acquisition and Fusion 21
Shuzhi Nie (Jiangmen Polytechnic, China)

Rateless Coded Relaying Transmission Scheme in Internet of Things 27
Xiaofei Di (Beijing Jiaotong University, P.R. China)

SDN Technology Analysis and Application Research 35
Jianfeng Jiang (Suzhou Industrial Park Institute of Services Outsourcing, China)

Relative Analysis of Network Information Security Technology against the Background of "Cloud Computing" 40
Baohui Shi (Beijing Information Technology College, China)

The De-Obfuscation Method in the Static Detection of Malicious PDF Documents 44
Yuntao Wang (University of Chinese Academy of Sciences, China)

Hardware Implementation Method of LDPC Efficient Decoding Based on FPGA 48
Yuyang Ji (Southwest Jiaotong University, China) and Yanjun Ji (The Eastern Liaoning University, China)

Design of Remote Monitoring System for a Mechanical Equipment Based on Internet of Things 54
Zhiyuan Zhang (Zhengzhou University of Light Industry, China) and Yongkang Yang (Zhengzhou University of Light Industry, China)

Design and Implementation of Vo IPQoS Model Combining IntServ and DiffServ Based on Network Processor IXP2400 60
Jianting Liu (University of Jinan, China)

Discussion on the Security Mechanism of Mobile Payment 65
Chunyan Chen (Beijing Information Technology College, China)

Research on the Reform of Teaching Mode in Higher Education Institutions Based on Internet Thinking 69
Fei Wang (Anhui Sanlian University, China; Anhui Sanlian Group, China; Anhui University, China), Huihui Chen (The 901th Hospital of the Joint Logistics Support Force of People's Liberation Army), Wei Wang (Anhui Sanlian University, China), and Shiwei Zhang (Anhui Sanlian University, China)

Research on the Construction of Rural Tourism Smart Platform Based on Information Technology 74
Ainiao Wang (Shandong Xiehe College, China)

Session 2: Artificial Intelligence and Automation

A Novel Design Scheme for an Ejection Device Inspection Instrument 77
Bo Su (Aviation Maintenance NCO Academy, Air Force Engineering University, China), Bingkun Jiang (Aviation Maintenance NCO Academy, Air Force Engineering University, China), and Le Qi (Aviation Maintenance NCO Academy, Air Force Engineering University, China)

Research and Design of Risk Assessment and Control System Microservice-Based Urban Rail Transit 82
Hongming Su (Beijing Jiaotong University, China), Yanhui Wang (Beijing Jiaotong University, China; Research and Development Center of Transport Industry of Technologies and Equipment of Urban Operation Safety Management, China), Man Li (Beijing Jiaotong University, China; Research and Development Center of Transport Industry of Technologies and Equipment of Urban Operation Safety Management, China), and Limin Jia (Beijing Jiaotong University, China; Research and Development Center of Transport Industry of Technologies and Equipment of Urban Operation Safety Management, China)

A 3D Multi-Scale Multi-Attention UNet for Automatic Hippocampal Segmentation 89
Lan Lin (Beijing University of Technology Beijing, China), Wenjie Kang (Beijing University of Technology Beijing, China), Yuchao Wu (Beijing University of Technology Beijing, China), Yuhan Zhao (Beijing University of Technology Beijing, China), Sixue Wang (Beijing University of Technology Beijing, China), Danyi Lin (Beijing University of Technology Beijing, China), and Jinlu Gao (Beijing University of Technology Beijing, China)

Research on the Teaching Method Reform of Automobile Related Courses: Take the Vehicle Hydraulic System as an Example 94
Wengang Chen (Southwest Forestry University, China), Haijun Wang (Southwest Forestry University, China), and Lili Zheng (Southwest Forestry University, China)

Student GroupRecommendation Using Extreme Learning Machinefor Collaborative Learning 99
Mo Chen (Northeastern University, China), Feng Li (Northeastern University, China), Bin Xu (Northeastern University, China), and Yu Zhang (Northeastern University, China)

A Magnetoelectric Heterostructure Scavenging Mechanical Energy from Hand Shaking for Portable Electronic Devices 106
Wei He (Baise University, China) and Shuanghua Liu (Baise University, China)

Design of EAST-NBI Field Control System Based on Profibus-DP Protocol 110
Shihua Song (Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, China), Sheng Liu (Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, China), Yongjian Xu (Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, China), Jinxin Wang (Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, China), Wei Liu (Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, China), Caichao Jiang (Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, China), and Ling Yu (Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, China)

AI Quality Cultivation and Application Ability Training for Normal University Students 116
Song Liu (Guizhou Normal University, China) and Xiaoyao Xie (Guizhou Normal University, China)

Distributed Diagnostic System Based on TSN for RF Ion Source Test Facility at ASIPP 121
Ling Yu (Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, China), Yongjian Xu (Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, China), Liping Chen (Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, China), Rixin Wang (Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, China), Xufeng Peng (Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, China), and Zichen Yu (Institute of Plasma Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, China)

Traffic Signal Control Method Based on A3C Reinforcement Learning 127
Maofan Wang (Chengdu University of Information Technology, China)

Construction of Teaching Behaviours Analysis Model for Smart Classroom 133
Caixia Li (Bejing Language and Culture University, China) and Jimei Li (Bejing Language and Culture University, China)

IOT Monitoring System of Medical Waste Based on Artificial Intelligence 139
Chao Wang (Jining Polytechnic, China), Yanxia Ma (Jining Polytechnic, China), and Gengxin Zhong (Jining Polytechnic, China)

Privacy Crisis in the Age of Artificial Intelligence and its Countermeasures 144
Yinglan Zhao (Sichuan University, China), Chi Gong (Sichuan University, China), and Yiying Wang (Sichuan University, China)

Trajectory Tracking Technology for Crawler Rescue Robot 148
Xiliang Ma (Xuzhou University of Technology, China) and Ruiqing Mao (Xuzhou University of Technology, China)

Research on the Application of Artificial Intelligence Technology in Teaching Introduction to Hotel Management in the Context of Smart Hotel 155
Qinghui Guo (Shandong Xiehe University)

The Fuel Gas Odorizing Equipment Based on Siemens LOGO! 158
Chunming Zhang (Engineering University of PAP, China), Yiyue Sun (Engineering University of PAP, China), and Zhimin Wang (Engineering University of PAP, China)

Visual Communication of China's Emerging Brands 168
Zhaoyuan Song (Beijing Institute of fashion Technology, China) and Shui Jin (Beijing Institute of fashion Technology, China)

A Novel Multi-Fingered Hand for Robotic Grasp 172
Xizhe Zang (Harbin Institute of Technology, China), Chao Wang (Harbin Institute of Technology, China), Pu Zhang (Zhejiang Lab, China), Shuai Heng (Harbin Institute of Technology, China), and Jie Zhao (Harbin Institute of Technology, China)

Research on Pipeline Leakage Detection Based on Neural Network 177
Zixuan Yang (Zhixing College of Hubei University, Wuhan, China), Zhifang Wang (China Classification Society Wuhan Rules&Research Institute, Wuhan, China), Xuan Wang (Zhixing College of Hubei University, Wuhan, China), Chang Liu (Zhixing College of Hubei University, Wuhan, China), and Cong Wang (Zhixing College of Hubei University, Wuhan, China)

Exploration on the Opportunity of Ideological and Political Education in the Age of Artificial Intelligence 182
Xi Gong (Nanchang Institute of Technology, China)

Design of Yacht Driving Training Simulator Based on VR 185
Qijia Gu (System Engineering Research Institute of China State Shipbuilding Corporation, China), Pengyi Zhang (System Engineering Research Institute of China State Shipbuilding Corporation, China), and Kunfu Wang (System Engineering Research Institute of China State Shipbuilding Corporation, China)

Session 3: Image Processing

A Color Image Encryption Based on 5D Hyper Chaos-Based System and DNA Dynamic Coding ... 190
Mingyan Xiao (Yunnan Normal University, Kunming China), Jie Guo (Yunnan Normal University, Kunming China), Baicheng Sun (Yunnan Normal University, Kunming China), and Chao Zhang (Yunnan Normal University, Kunming China)

Imaging Multivariate Time-Series to Improve Fault Detection: Application on Tennessee Eastman Process 196
Qishan Wang (Southeast University, China), Guobao Zhang (Southeast University, China), Yongming Huang (Southeast University, China), and Yongchun Zhang (Southeast University, China)

Parameters Calibration of CT System Based on Geometric Model and Inverse Radon Transform 202
Hongliang Huang (Zhuhai College of Jilin University, Guangdong Province), Weiyu Tang (Zhuhai College of Jilin University, Guangdong Province), Juntao Yang (Zhuhai College of Jilin University, Guangdong Province), and Lidong Wang (Zhuhai College of Jilin University, Guangdong Province)

Multiple Image Encryption Algorithm Based on Random Chaotic System and Bit Permutation 213
Guangman Sun (Shantou University, China), Jinbin Chen (Shantou University, China), and Ruisong Ye (Shantou University, China)

A Novel AR Maintenance Training System and Its Effect Prediction 219
Qiang He (Civil Aviation Flight University of China, China) and Xiaoqiang Yang (Civil Aviation Flight University of China, China)

Automatic Image Recognition of Austenite Grain Boundary in Martensitic Metallography Based on Image Style Transfer 226
Xinghua Su (Information center of CNPC Chuanqing Drilling Engineering Co., Ltd.), Sheng Zhan (Information center of CNPC Chuanqing Drilling Engineering Co., Ltd.), Zhe Lv (School of computer science, Northwest University of technology), Xiang Gao (Southern Marine Science and Engineering Guangdong Laboratory (Zhuhai)), and Hang Su (Metallurgical automation research and Design Institute of China Steel Research Technology Group Co., Ltd., China)

Report Based Face Detection and Recognition 233
Hameer Ahmed (University of Jinan, China), Hengjian Li (University of Jinan, China), Fayaz Hussain Dharejo (University of Chinese Academy of Sciences, China), Asif Ali Laghari (Sindh Madressautal Islam University, Pakistan), and Shahid Karim (Barani Institute of Management Science, Pakistan)

A New Ship Target Detecting Method Based on Saliency in SAR Image 241
Yanyan Hu (Xi'an university of technology, China), Xiaofan Wang (Xi'an university of technology, China), Wei Li (Xi'an university of technology, China), Xinhong Hei (Xi'an university of technology, China), and Guo Xie (Xi'an University of Technology, China)

Research on the Integrated Development of AR Technology and Rural Red Research Tourism 246
Wei Wei (Park County, North-II Area, Vientiane Xintian, Licheng District, China)

Session 4: Intelligent Computing

Motion Detection and Object Detection: Yolo (You Only Look Once) 250
Zoubaydat Dahirou (Digital Image Processing, Beijing University of Technology, China) and Mao Zheng (Photoelectric Tracking Technology, Beijing University of Technology, China)

Multi-Class Imbalanced Fault Diagnosis Method Based on IMWMOTE and MFO-Bayes-LS-SVM .. 258
Yunwei Zhu (Guizhou University, China), Jianan Wei (Guizhou University, China), and Haisong Huang (Guizhou University, China)

Research on Prediction of Checked-Baggage Departed from Airport Terminal Based on Time Series Analysis 264
Qun Ma (Tangshan Research Institute of Beijing Jiaotong University, China), Jun Bi (Beijing Jiaotong University, China), Qiuyue Sai (Beijing Jiaotong University, China), and Ziyu Li (Beijing Jiaotong University, China)

SVR Short-Term Traffic Flow Forecasting Model Based on Spatial-Temporal Feature Selection 270
Xin Wang (School of Science, Beijing Information Science & Technology University, Beijing, China)

Improved Subpixel Amplitude Measurement of Canny Operator in Ultrasonic Frequency Vibration 276
Xin Wang (Jilin University, China), Jiangtao Yu (Jilin University, China), Ning Feng (Jilin University, China), and Yan Zhang (Jilin University, China)

Intelligent Power Distribution Visual Monitoring System 282
Xiaohuan Wu (State Grid Hangzhou Power Supply Company, China), Jiajin Qi (State Grid Hangzhou Power Supply Company, China), Huanqiang Zhong (State Grid Hangzhou Power Supply Company, China), and Zhongwei Zhao (Zhejiang Gongshang University, Hangzhou, China)

Testing for Heteroscedasticity in Multiple-Input-Single-Output (MISO) System Regression Model 287
Xun Guan (Huzhou University, China)

A New Method of Property Right Transaction of Service Data Resources Based on Blockchain 296
Tao Wang (Organization and compilation unit: ninth power big data information group, China), Hu Guan (Institute of Automation, Chinese Academy of Sciences, China), Yaqing Si (Beijing University of Post and Telecommunicaiton, China), Jing Su (Beijing University of Post and Telecommunicaiton, China), and Lei Pan (Organization and compilation unit: ninth power big data information group, China)

Analog Circuit Fault Diagnosis Based on FFT-CNN-LSTM 305
Bo Sun (Shenyang Ligong University), Wanzhou Xu (Shenyang Ligong University), and Qing Yang (Shenyang Ligong University)

Research on the Targeted Poverty Alleviation Path of Red Tourism Commodities in Shandong from the Perspective of "Internet + Agriculture" 311
Qian Lin (Shandong Xiehe University, China)

Research on Source Monitoring System of Medical Waste Recycling Smart Device 315
Xiufang Wang (Jining Polytechnic, China), Chao Wang (Jining Polytechnic, China), and Huiru Jia (Jining Polytechnic, China)

Prediction of Air Pollutant Concentration Based on Luong Attention Mechanism Seq2Seq Model… 321
Jianhong Gan (Chengdu University of Information Technology, China), Haoyang Liu (Chengdu University of Information Technology, China), and Tongli He (Chengdu University of Information Technology, China)

Block Chain + Accounting: Applications, Challenges and Countermeasures Research 326
Zekai Wang (Wuhan Textile University, China)

Measurement of Worn Drill Bit Size Based on Edge Detection of Gradient Algorithm 331
Tianyu Li (Shanghai Dianji University, China), Binbin Li (Shanghai Dianji University, China), Chaoqun Wang (Shanghai Dianji University, China), Pengyu Cheng (Shanghai Dianji University, China), and Zhiqiang Zhou (Shanghai Dianji University, China)

Petroleum Software License Usage Forecast Based on ARIMA Algorithm 336
Mengxin Song (Research Institute of Petroleum Exploration & Development, China), Mei Feng (Research Institute of Petroleum Exploration & Development, China), and Hongping Miao (Research Institute of Petroleum Exploration & Development, China)

Impact of the Pandemic on Information and E-Commerce Stock Market Returns: The Case of Hong Kong 341
Jiangsheng Zhao (Xiamen University, China), Zhibin Xu (City University of Macau, China), Jiansong Zheng (City University of Macau, China), Binglin Tang (City University of Macau, China), and Yaoxi Jin (City University of Macau, China)

The Non-Linear Model Research of Two-Phase Switched Reluctance Motor Basic on Interpolation and Fitting Methods 346
Ruihao Wang (Jinan Keya Election and Technology., China), Qihui Wang (Jinan Keya Election and Technology., LTD, China), Junling Huo (Jinan Keya Election and Technology., LTD, China), Xiaowei Pan (Jinan Keya Election and Technology., LTD, China), and Hongxing Wu (Harbin Institute of Technology, China)

Intelligent Ship-Shore Cooperation for USV: A Brief Survey and Suggested Scheme 353
Donghang Liu (Systems Engineering Research Institute, China State Shipbuilding Corporation (CSSC), China), Yida Yan (School of Electronic and Information Engineering, Beijing Jiaotong University, China), Sijia Tian (Systems Engineering Research Institute, China State Shipbuilding Corporation (CSSC), China), and Peng Li (School of Electronic and Information Engineering, Beijing Jiaotong University, China)

Modal Analysis and Structure Optimization of Composite Circuit Board 358
Tianlong Gao (Northwestern Polytechnical University, Shaan'xi Province)

Metaheuristics Optimization Algorithm to an Optimal Moroccan Diet 364
K. El Moutaouakil (Engineering Science Laboratory, USMBA, Faculty Polydisciplinary, Morocco), M. Cheggour (MorphoSciences Research Laboratory of the Faculty of Medicine and Pharmacy of Marrakech, Université Cadi Ayyad, Morocco), S. Chellak (MorphoSciences Research Laboratory of the Faculty of Medicine and Pharmacy of Marrakech, Université Cadi Ayyad, Morocco), and H. Baïzri (Hicham Baïzri The Biosciences and Health laboratory - Faculty of Medicine and Pharmacy Université Cadi Ayyad, Morocco)

A New Computing Design for Complex Traffic Query System 370
Yunchao Wei (Shanghai Ocean University, China), Yanming Ge (Shanghai Ocean University, China), and Yaling Yong (Shanghai Ocean University, China)

Influence of Friction on Direct-Drive Electromechanical Servo System of Optoelectronic Stabilized Platform 373
Zhiqiang Li (Naval Aviation University Qingdao Branch, Qingdao, China), Chao Song (Naval Aviation University Coastal Defense College, Yantai, China), and Fenglei Xu (Naval Aviation University Qingdao Branch, Qingdao, China)

Insight into the Inhibitory Activities of Diverse Ligands for Tyrosinase Using Molecular and Structure-Based Features 378
Haifeng Tang (Jilin University, China), Qi Hu (College of Humanities & Information Changchun University of Technology, China), Qin Hu (College of Humanities & Information Changchun University of Technology, China), Aohua Fan (College of Humanities & Information Changchun University of Technology, China), Xiaoguang Chen (College of Humanities & Information Changchun University of Technology, China), and Ying Liu (College of Humanities & Information Changchun University of Technology, China)

Session 5: Data Mining, Analysis and Modeling

Identification of Offshore Oil and Gas Drilling Platforms Based on Multi-Source Remote Sensing Data 384
Caihong Ma (Sanya Institute of Remote Sensing, China; Aerospace Information Research Institute, Chinese Academy of Sciences, China), LinLin Guan (Sanya Institute of Remote Sensing, China), and Dacheng Wang (Sanya Institute of Remote Sensing, China)

Employment Situation Analysis of College Students Based on Hidden Markov Model 388
Zhichun Jia (Bohai University, China), Xv Wu (Bohai University, China), Xiang Ye (Bohai University, China), Yuemei Xi (Bohai University, China), Qiuyang Han (Bohai University, China), and Xing Xing (Bohai University, China)

The Application of an Improved C4.5 Decision Tree 392
Peng Chen (GuangDong Mechanical & Electrical Polytechnic, China)

Business Environment Evaluation Based on Entropy-Topsis Model: Evidence from China 397
Xuedong Liang (Sichuan University, China), Siyuan Huang (Sichuan University, China), Sipan Li (Sichuan University, China), Qunxi Gong (Sichuan University, China; Sichuan Haina Rendong Science and Technology, Co. Ltd.), and Gengxuan Guo (Sichuan University, China)

App Evaluation Based on Random Forest Algorithm 403
Yushi Sui (Shanghai University of Finance and Economics, China)

Data Mining and Analysis-Based E-Book Purchasing Strategy of University Libraries 412
Liping Xiao (Library of Jinan University, China), Tianzhang Li (Library of Jinan University, China), and Jingqian Tang (Library of Jinan University, China)

Research on the Improvement Strategy of "Sound Taishan" Tourism Destination Brand Construction Based on Big Data Analysis 419
Ranran Guo (Shandong Xiehe University, China) and Yinghui Wu (Shandong Xiehe University, China)

Research on Public Sentiment of Weibo Topics Based on Emotional Tendency - Taking "LaBiXiaoQiu Was Detained" as an Example 424
Lei Liang (Capital University of Economics and Business, China) and Xiaolei Zhou (Capital University of Economics and Business, China)

Research on Surface Quality Monitoring of Workpiece Based on CornerNet 430
Qiaoqiao Xiong (Faculty of Engineering, Universiti Putra, Malaysia), Saihong Tang (Faculty of Engineering, Universiti Putra, Malaysia), Yiting Li (GuiZhou University, China), and Qipeng Chen (GuiZhou University, China)

Existence of Mild Solutions for Semi-Linear Measure Driven Equations with Infinite Delay 439
Wenjie Liu (Anhui Vocational College of City Management, China) and Shengli Xie (Anhui Jianzhu University, China)

Web Service Quality Prediction Method Based on Recurrent Neural Network 445
Xiang Ye (Bohai University, China), Yanmei Wang (Bohai University, China), and Zhichun Jia (Bohai University, China)

CBTC Systems Resilience Evaluation Based on Resource State Model under DoS Attacks 451
Erni Guo (Beijing Jiaotong University, China) and Bing Bu (Beijing Jiaotong University, China)

Model Construction and Evaluation of Microblog News Popularity Prediction 457
Jianfeng Tang (Tongji University, P.R. China), Xiang Xu (Tongji University, P.R. China), and Juan Qiu (Tongji University, P.R. China)

Research on the Policy Text of Maker Space in Zhejiang Province of China 465
Yingyan Wang (Yiwu Industrial and Commercial College, China), Gang Yang (Wenzhou University School of Education, Wengzhou), and Rui Zeng (Yiwu Industrial and Commercial College, China)

Zero Watermarking Algorithm in Wavelet Domain Based on Chaotic Scrambling 470
Zhengfei Wu (Huainan Normal University, China) and Jinlin Chen (Huainan Normal University, China)

Development of Elderly Care Industry in Urban-Rural Areas in the Perspective of “Internet Plus” 477
Guangtao Zhou (Shandong Xiehe University, China)

Attribute Information Extracting Method for Air Quality Assessment of Buildings 483
Xiaozhi Du (State Key Laboratory of Rail Transit Engineering Information; Xi’an JiaoTong University, China), Yurong Duan (Xi’an JiaoTong University, China), and Wei Huang (Xi’an JiaoTong University, China)

Chinese Visiting Scholars’ Canadian Community Engagement 489
Pinge Ai (Huanggang Normal University, China) and Yuehua Zhu (Pudong New District, China)

Improved Chinese Word Segmentation Algorithm of Quantitative Units in Elementary Mathematics Application Problems 493
Mingli Bai (Southwest Jiaotong University, China) and Mingwen Wang (Southwest Jiaotong University, China)

An Edge Device for Personal Big Data Tracking 500
Haichao Huang (State Grid Zhejiang Electric Power Company, China), Yuqing Xie (State Grid Zhejiang Electric Power Company, China), Zhangchi Ying (State Grid Zhejiang Electric Power Company, China), Chang Yao (Zhejiang University, China), Peng Lu (Zhejiang University, China), and Xianke Zhou (Zhejiang University, China)

Research on the Construction of Cloud Computing Platform Project Based on IaaS and PaaS 506
Ting Chen (Industrial&Internet school of Beijing Information Technology College, China) and Haiyan Liu (Industrial&Internet school of Beijing Information Technology College, China)

Analyses the Business Etiquette in Cross-Cultural Communication 511
Yanling Zheng (Nanchang Institute of Technology, China)

Research on Seasonal PM 2.5 Predication in Hangzhou City Based on SSA-ELM Model 515
Bingjie Liu (School of Science, Zhejiang University of Science and Technology, China) and Shanli Ye (School of Science, Zhejiang University of Science and Technology, China)

Study on the Three Dimensional Evaluation Model of English Listening and Speaking in the Context of Big Data 525
Youya Zhou (Nanchang Institute of Technology, China)

Incentive Mechanism and Task Allocation Methods for Mobile Crowd Sensing: A Survey 528
Qianrun Chen (Pittsburgh Institute, Sichuan University, China)

The Comparison in Polite Language between Western Culture and Chinese Culture 532
Yanling Zheng (Nanchang Institute of Technology, China)

A Numerical Real Time Web Tracking and Scrapping Strategy Applied to Analysing COVID-19 Datasets 536
Abderrahmane Ez-Zahout (Mohammed V University in Rabat, Morocco), Said Chakouk (Mohammed V University in Rabat, Morocco), Salwa Mitouilli (Al Akhawayn University in Ifrane, Morocco), and Mohamed Amine El Bouni (Al Akhawayn University in Ifrane, Morocco)

Corpus-Based Statistical Analysis of TEM-4 Reading Comprehension 543
Jing Xiong (Nanchang Institute of Technology, China)

Design and Research on UAV Vibration Resistance Module 550
Jiapeng Li (China Aerodynamics Research and Development Center), Zhenhua Lei (China Aerodynamics Research and Development Center; ChongQing University), Dapeng Gao (China Aerodynamics Research and Development Center), Kaiming Xu (China Aerodynamics Research and Development Center), and Guangyi Shi (School of Software & Microelectronics, Peking University)

Analysis on Growth Characteristics of LyciumBarbarum in Qaidam Basin from 2002 to 2015 554
Yu'e Du (Gansu Institute of Natural Energy, Lanzhou), Baokang Liu (College of resources and environmental engineering of Tianshui Normal University), and Weiguo He (Information Science School of Guangdong University of Finance & Economics, Guangdong)

Profiling Pumped Storage Power Station via Multi-Sequence Joint Regression 559
Wancheng He (State Grid Xin Yuan Company Limited, China), Xun Li (State Grid Xin Yuan Company Limited, China), Kaitao Zhou (State Grid Xin Yuan Company Limited, China), Junheng Huang (Beijing Jiaotong University, China), and Shuang Tang (Beijing Jiaotong University, China)

Conception of Building EWIS Data Integration Management Platform 564
Yajiao Lin (Avic Jonhon Optronic Technology Co., China), Weili Chen (Avic Jonhon Optronic Technology Co., China), and Haonan Li (Avic Jonhon Optronic Technology Co., China)

Analysis and Application of Elderly Activity Space in Digital Community Based on Environment Perception Experience 569
Ao Chen (Beijing University of Agriculture, China) and Chenglin Gao (Beijing University of Agriculture, China)

The Impact of "11.11 Shopping Festival" on E-Commerce and Traditional Industries 574
Fang Chen (Nanchang Institute of Technology, China) and Hongmei Li (Nanchang Institute of Technology, China)

Research on the Propagation Path of Tourism Poverty Alleviation Based on the Background of "Computer Internet +" 578
Hongxi Zhang (South China University of Technology, China; Guizhou Minzu University, China; Tourism College of Beijing Union University, China), Qiong Liu (Guizhou Minzu University, China; Beijing Guanghuijintong Education and Technology Co. Ltd, China), Hanqing Hu (Beijing Information Science and Technology University, China), Haiyan Xia (Guizhou Minzu University, China), and Hong Zhao (South China University of Technology, China; Guizhou Minzu University, China)

The Urban City-Industry Integration Degree Evaluation Based on Ordinal Logistic Regression..... 582
Darong Luo (Wuyi University) and Jianhua Xiao (Wuyi University)

An Empirical Analysis of the Utility of NHPP SRGM 589
Wenqian Jiang (Harbin Institute of Technology (Weihai)), Ce Zhang (Harbin Institute of Technology (Weihai)), Wenyu Li (Harbin Institute of Technology (Weihai)), Miaomiao Fan (Harbin Institute of Technology (Weihai)), Zhichao Sun (Harbin Institute of Technology (Weihai)), Yafei Wen (Harbin Institute of Technology (Weihai)), and Kaiwei Liu (Harbin Institute of Technology (Weihai))

Analysis of Radar Detection Accuracy Deviation Based on Goodness of Fit Test 599
Pengyi Zhang (System Engineering Research Institute of China State Shipbuilding Corporation, China), Qijia Gu (System Engineering Research Institute of China State Shipbuilding Corporation, China), and Kunfu Wang (System Engineering Research Institute of China State Shipbuilding Corporation, China)

Session 6: Machine Learning

A Secure DHCPv6 System Based on MAC Address Whitelist Authentication and DHCP Fingerprint Recognition 604
Wanjuan Xie (South China University of Technology, China), Junhua Yu (South China University of Technology, China), and Guoqiang Deng (South China University of Technology, China)

Computer-Assisted Dynamic Assessment on Translation Performance 609
Juan Li (Nanchang Institute of Technology, China)

Multiple Regression and K-Nearest-Neighbor Based Algorithm for Estimating Missing Values within Sensor 613
Xiantong Li (Harbin Institute of Technology, China) and Yuan Sui (Beijing University of Technology, China)

Data Link Fault Location Model Based on Machine Learning 619
Shuo Cui (Big Data Center of State Grid Corporation of China, P.R.China), Jiangbo Yin (Beijing China-Power Information Technology co., ltd, P.R.China), Jun Wang (Beijing China-Power Information Technology co., ltd, P.R.China), and Peixin Xu (North China Electric Power University, P.R.China)

Adaptation Level Evaluation of Two Free Online Machine Translators Youdao and Google in Translating Chinese City Publicity Materials 624
Xueling Zhang (Nanchang Institute of Technology, China)

Question Answering System Model Based on Multi Granularity Semantic Representation 629
Rui Zhao (The Third Research Institute of the Ministry of Public Security, China), Songyang Wu (The Third Research Institute of the Ministry of Public Security, China), Yi Mao (The Third Research Institute of the Ministry of Public Security, China), and Ning Li (The Third Research Institute of the Ministry of Public Security, China)

Development of a Set of DNA Methylation Markers in the Diagnosis and Prognosis of Papillary Thyroid Carcinoma by Machine Learning 635
Wei Chen (School of Information Engineering, PR China; Wenzhou Medical University, PR China), Yunni Yao (School of Information Engineering, PR China; Wenzhou Medical University, PR China), Pinglu Zheng (School of Information Engineering, PR China), and Janeth Malywanga (Wenzhou University, PR China)

Machine Learning Forecasting of Foreign Exchange Markets Trend Based on Order Flow and US Economic News 640
Shahrokh Firouzi (University of Science and Technology of China, China), Xiangning Wang (University of Science and Technology of China, China), and Ali Totonchyfardmotlagh (University of Science and Technology of China, China)

Exercise Recommendation Method Combining NeuralCD and NeuMF Models 646
Yan Cheng (Jiangxi Normal University, China), Meng Li (Jiangxi Normal University, China), Haomai Chen (Yuzhang Normal University, China), Yingying Cai (Jiangxi Normal University, China), Huan Sun (Jiangxi Normal University, China), Haifeng Zou (Jiangxi Normal University, China), and Guanghe Zhang (Jiangxi Normal University, China)

Early Warning Mechanism and Countermeasures of Enterprise Financial Risk in the Era of Big Data 652
Lijun Jiang (Shandong Xiehe University, China)

An Improved Tri-Training Based Named Entity Identification Approach for Legal Knowledgebase of Properties Involved in Criminal Cases 655
Yimin Yang (CASIC Intelligence Industry Development Co., Ltd, China), Zhaochong Wang (CASIC Intelligence Industry Development Co., Ltd, China), and Zongshen Jiang (Sichuan University, China)

Knuckle Pattern Recognition Method Based on Improved U-net 661
Xiufeng Zhang (Dalian Minzu University, China), Shengjin Guo (Dalian Minzu University, China), Tianyi Ma (Dalian Minzu University, China), and Ning Zhang (Dalian Minzu University, China)

Research on ShadowsocksR Traffic Identification Based on DART Algorithm 666
Qingbing Ji (Northwestern Polytechnical University, China; China Electronics Technology Group Corporation, China), Xiaoyan Deng (Chengdu University of Information Technology, China), and Lulin Ni (China Electronics Technology Group Corporation, China)

Digital Image Soil Analysis Based on Machine Learning 673
Quchao Cheng (Shanghai Dianji University, China), Jiaojie Li (Shanghai Dianji University, China), Guochao Shen (Shanghai Dianji University, China), and Qingmin Du (Shanghai Dianji University, China)

Research on Clutter Simulation Method in Navigation Radar Simulator Training System 678
Ye Yao (Northwestern Polytechnical University, China; Dongguan Sanhang Civil-Military Integration Innovation Institute, China), Yian Zhu (Northwestern Polytechnical University, China), Bin Tian (Naval Engineering University, China), Lian Li (Northwestern Polytechnical University, China), Lixiang Zhang (Northwestern Polytechnical University, China), Chunyu Che (Northwestern Polytechnical University, China), and Bin Lian (Dongguan Sanhang Civil-Military Integration Innovation Institute, China)

Research on Prediction Method of the Train Occupancy Rate Based on Machine Learning 685
Qin Yang (Beijing Jiaotong University, China) and Minshu Ma (Beijing Jiaotong University, China)

Study on Failure Law of Deformation and Instability of Surrounding Rock in Deep Soft Rock Roadway 692
Lei Shao (Donghua Engineering Technology C., Ltd, China), Heyong Yuan (Anhui Communications Vocational & Technical College), Xinfeng Wang (Xiangtan University, Xiangtan), Wengang Liu (Xiangtan University, Xiangtan), and Qiao Zhang (Xiangtan University, Xiangtan)

Session 7: Wireless Communication and Networking

A Residual-Energy-Boundary-Estimation-Based Charging Scheduling Scheme in Wireless Rechargeable Sensor Network 697
Haobo Wang (Sichuan University, China), Yingjue Chen (Sichuan University, China), and Feng Lin (Sichuan University, China)

Research on Time Domain Filtering Based on Choi-Williams Distribution about Time-Phase Modulation 708
Peihong Zhao (Naval Petty Officer's Academy, China) and Ling Xu (Naval Petty Officer's Academy, China)

Automatic Control System of Sluice Based on PLC, MCGS and MODBUS Communication 716
Xueru Li (Ji'ning Polytechnic, China), Fanwen Meng (Ji'ning Polytechnic, China), and Xuan Zheng (Ji'ning Polytechnic, China)

Adaptive Channel Status Based Access Class Barring Scheme in C-V2X Networks 721
Gongan Qiu (Nantong University, China; Nantong Research Institute for Advanced Communication Technologies, China), Zhihua Bao (Nantong University, China), and Shibing Zhang (Nantong University, China)

Real-Time Data Communication Method for Smart Power Plants 726
Xiaozhi Du (Xi'an JiaoTong University, China), Wei Huang (Xi'an JiaoTong University, China), Qiaohui Yang (Xi'an JiaoTong University, China), and Yurong Duan (Xi'an JiaoTong University, China)

Test of the Modulation Bandwidth of the LED in Visible Light Communication 733
Xinfa Miao (Lanzhou Jiaotong University, China), Kai Ren (Lanzhou Jiaotong University, China), Xiaoqin Li (Lanzhou Jiaotong University, China), and Baolian Liu (Lanzhou Jiaotong University, China)

Integrated Navigation Algorithm for Intelligent USVs with Unstable GPS 738
Hang Li (Unit 91776 of PLA, China), Yi Lin (Unit 91776 of PLA, China), Yiyang Duan (China State Shipbuilding Corporation (CSSC)), Kang Si (Beijing Jiaotong University, China), and Peng Li (Beijing Jiaotong University, China)

Integrated Navigation Algorithm for USV with Insufficient Satellites 743
Kang Si (Beijing Jiaotong University, China), Jun Wei (Systems Engineering Research Institute, China), Xiao He (Systems Engineering Research Institute, China), Donghang Liu (Systems Engineering Research Institute, China), and Peng Li (Beijing Jiaotong University, China)

Data Prediction and Abnormal Forewarning for Space Environment Simulator Based on Three-Layer Framework 749
Xinming Su (Beijing Institute of Spacecraft Environment Engineering, China; BeiHang University, China), Wenjie Zhang (China Aerospace Science and Technology Corporation, China), Jinlong Liu (Beijing Institute of Spacecraft Environment Engineering, China), Zhijia Li (Beijing Institute of Spacecraft Environment Engineering, China), Ruofan Deng (Beijing Institute of Technology, China), Jia Hao (Beijing Institute of Technology, China), Hui Long (Beijing Institute of Technology, China), and Yang Zhang (Beijing Institute of Spacecraft Environment Engineering, China)

The Design and Implementation of Visual Simulation Software for WSNs Communication Link 759
Xiaoyu Zhang (Institute of Military Products, Shandong Special Industry Group Co. Ltd., China), Zhenzhen Fan (Information Engineering Department, Shandong Vocational College of Light Industry, China), Weiyi Xu (Shenyang Ligong university, China), and Lu Zhuo (Institute of Military Products, Shandong Special Industry Group Co. Ltd., China)

Session 8: Computer Science and Engineering

The Cultivation of Innovative Thinking in University Computer Course 765
Xing Xing (Bohai University, China), Junye Xing (Bohai University, China), Ruiyan Wang (Bohai University, China), Feixiang Diao (Bohai University, China), Qiuyang Han (Bohai University, China), and Zhichun Jia (Bohai University, China)

Research on Optimization of Teaching Mode of Biochemistry Course Based on Internet Thinking 770
Fei Wang (Anhui Sanlian University, China; Anhui Sanlian Group, China; Anhui University, China), Huihui Chen (The 901th Hospital of the Joint Logistics Support Force of People's Liberation Army, China), Tao Wang (The 901th Hospital of the Joint Logistics Support Force of People's Liberation Army, China), Xianlan Lan (Anhui Sanlian University, China), and Shiwei Zhang (Anhui Sanlian University, China)

Research on Ideological and Political Education in Colleges Based on Online and Offline Blended Teaching Mode 773
Juanping Shao (Nanchang Institute of Technology, China)

A Novice Framework for Learning Java in Higher Education 777
Yongbin Zhang (Beijing Institute of Graphic Communication, China), Ronghua Liang (Beijing Institute of Graphic Communication, China), Yuansheng Qi (Beijing Institute of Graphic Communication, China), Hejie Chen (Beijing Institute of Graphic Communication, China), and Bingran Li (Beijing Institute of Graphic Communication, China)

Design and Optimization of Ultrasonic Fatigue Specimen Based on ANSYS Modeling 782
Xin Wang (Jilin University, Changchun, China), Ning Feng (Jilin University, Changchun, China), Jiangtao Yu (Jilin University, Changchun, China), and Qun Li (Jilin University, Changchun, China)

The Teaching Research on Satellite Sub-Satellite Point Knowledge 788
Lijuan Gao (Space Engineering University, China), Jiong Li (Space Engineering University, China), and Jincheng Li (Space Engineering University, China)

Research on Process Optimization of Policy Food Information Management Based on ESIA Method 792
Maosheng Huan (The State Information Center, China), Suyun Li (The State Information Center, China), and Chi Zhang (The State Information Center, China)

A Study on the Ideological and Political Teaching Strategies of French Professional English Course from the Perspective of New Media 797
Jun Tan (Nanchang Institute of Technology, China) and Jun Wan (Nanchang Institute of Technology, China)

Price-Based Resource Allocation Scheme for V2X Communications Underlying Uplink Cellular Network 801
Yurong Cheng (Naval Research Institute, China) and Yu Zhao (Naval Research Institute, China)

Design and Application of Customer Services Business Middle Platform for Opening Service Capabilities of Electric Power Marketing 807
Hong Lin (State Grid Information & Telecommunication Group Co., Ltd., China), Qianfu Zhang (State Grid Information & Telecommunication Group Co., Ltd., China), Wei Yang (State Grid Customer Service Centre, China), Zuoping Wu (State Grid Information & Telecommunication Group Co., Ltd., China), Caijun Zhang (State Grid Customer Service Centre, China), Xingping Wu (State Grid Customer Service Centre, China), and Wenhao Yan (State Grid Customer Service Centre, China)

A Research on Network Resources and Task-Based Instruction for Chinese College English Learners 816
Min Gong (Nanchang Institute of Technology, China)

Application of Information Technology to Promote the Practice of ESP Teaching 821
Lingbo Wang (Wuhan Polytechnic, China)

A Research on the Perception of Authenticity of Self-Service Tourists Based on the Background of Smart Tourism 826
Na Gong (Guizhou Normal University, China), Haiyan Fu (Guizhou Normal University, China), and Chi Gong (Sichuan University, China)

The Effects of Government Innovation Investment on the Development of Computer Industry 831
Chi Gong (Sichuan University, China), Xianghui Yang (Sichuan University, China), and Lilong He (Sichuan University, China)

Strong Stability of Optimal Design for a Time-Varying Dynamic System in Batch Culture 836
Qi Yang (Guangxi Key Laboratory of Cryptography and Information Security, Guilin University of Electronic Technology, China), Qunbin Chen (Guangxi Key Laboratory of Cryptography and Information Security, Guilin University of Electronic Technology, China), and Pai Zhang (Guangxi Key Laboratory of Cryptography and Information Security, Guilin University of Electronic Technology, China)

The Optimization of Legal Curriculum System in Higher Vocational Colleges under "Intelligent Campus" 842
Shaofei Bi (Jiangxi Vocational College of Tourism and Commerce, Jiangxi Province)

Service Innovation for Value Co-Creation: The Role of Digital Technology 846
Mingwei Li (Qingdao University, China), Ying Cao (Qingdao University, China), Gang Tan (Qingdao University, China), and Panpan Zhu (Qingdao University, China)

New Development of Family Education in China and America with Ubiquitous on-Line Learning Approach 851
Juan Li (Nanchang Institute of Technology, China)

Optimal Design of Collecting Module in Monitoring System 855
Xiubo Liang (Zhejiang University, China) and Gangzhe Shi (Zhejiang University, China)

The Research On Evaluation of Textile Enterprise Environmental Governance Efficiency 861
Guoping Liao (ChangZhou University, China) and Min Hang (ChangZhou University, China)

Application of Docker Container Technology in University Information Center 867
Wei Wang (Hongsongyuan Beili, China)

Research on the Application and Practice of Blended Teaching Mode in Big Data Era 870
Yinghui Wu (Shandong Xiehe University, China) and Ranran Guo (Shandong Xiehe University, China)

Design and Implementation of Comprehensive Decision Support System in the Lower Yellow River 873
Haiyan Liu (School of Computer & Communication Engineering Beijing Information Technology College, China), Xiaomin Liu (Water Conservancy and Civil Engineering College Inner Mongolia Agricultural University, China), and Qiong Chen (Water Conservancy and Civil Engineering College Inner Mongolia Agricultural University, China)

Research on the Fine Management Platform of Scientific Research Activities under the Information Condition 878
Xiaofeng Zhang (Engineering College of Information, Engineering Eniversity of PAP, China)

Research on Contemporary Neologisms from the Perspective of Multimedia 881
Hongmei Li (Nanchang Institute of Technology, China) and Fang Chen (Nanchang Institute of Technology, China)

Design and Practice of Mixed Experimental Teaching Mode Based on BOPPPS Concept 886
Ke Wang (Equipment Management and Unmanned Aerial Vehicle Engineering College of AFEU, China), Peng Zhang (Equipment Management and Unmanned Aerial Vehicle Engineering College of AFEU, China), Xiaofeng Zhang (Engineering University of the Armed Police Force, China), and Shuguang Liu (Equipment Management and Unmanned Aerial Vehicle Engineering College of AFEU, China)

Research on Curriculum System Reconstruction of Cloud Computing Technology Application Major Based on "1 + X" 891
Xinhui Yan (Beijing Information Technology College, Beijing)

A Comprehensive Performance Evaluation Method for Fuel Cell Commercial Vehicles 894
Zhu Yan (Beijing Institute of Technology, China), Zhenyu Sun (Beijing Institute of Technology, China), Peng Liu (Beijing Institute of Technology, China), Chongwen Wang (Beijing Institute of Technology, China), and Naiwu Li (Weichai Power Co., Ltd., China)

On the Use of a Flipped Classroom Approach: Evidence from “Fundamentals of Computer Application” in Higher Vocational Education 900
Mailing Meng (Shandong Vocational College of Science and Technology, China)

Session 9: Deep Learning

Application of Image Segmentation Based on Deep Learning in Mobile Terminal Equipment 903
Jianhong Gan (Chengdu University of Information Technology, Chengdu, China), Yu Ren (Chengdu University of Information Technology, Chengdu, China), Tongli He (Chengdu University of Information Technology, Chengdu, China), Rui Li (Chengdu University of Information Technology, Chengdu, China), and Liyu Wen (Chengdu University of Information Technology, Chengdu, China)

Research on Intelligent Management of Fishing Ground Based on Target Detection 909
Chiyuan Qu (East China University of Science and Technology, China), Zhuhao Lu (East China University of Science and Technology, China), and Tianyun Hu (East China University of Science and Technology, China)

Information Security Architecture Design of CBTC System 917
Hongli Zhao (Beijing Jiaotong University, China) and Lili Li (Datang Mobile Communications Equipment co., ltd, China)

CycHash: A Novel Deep Learning to Hash Method for Image Retrieval 921
Zhuangping Qi (Shanghai Engineering Center for Microsatellites (SECM), China), Lei Liu (Shanghai Engineering Center for Microsatellites (SECM), China), Huijie Liu (Shanghai Engineering Center for Microsatellites (SECM), China), Li Li (Shanghai Engineering Center for Microsatellites (SECM), China), and Hua Gao (Zhejiang University of Technology, China)

A Survey of Chinese Character Recognition Research Based on Deep Learning 926
Chunxia Zhang (Tianjin University of Science and Technology, China), Longxue Li (Tianjin University of Science and Technology, China), and Xudong Li (Nankai University, China)

Label-Noise Robust Person Re-Identification via Symmetric Learning 932
Wen Peng (Wuhan University of Technology, China), Xian Zhong (Wuhan University of Technology, China), Chengming Zou (Wuhan University of Technology, China), Jin Zhang (ZhongQianLiYuan Engineering Consulting Co., Ltd, China), Qui Ci (China Construction Third Engineering Bureau Group Co., Ltd, China), and Luo Zhong (Wuhan University of Technology, China)

Label Interpolation Based Deep Learning for Direction of Arrival Estimation 937
Shiwei Ren (Beijing Institute of Technology, China), Dingsu Xu (Beijing Institute of Technology, China), and Weijiang Wang (Beijing Institute of Technology, China)

A Question Answering System Based on Multi-Granularity Semantic Interaction Neural Network. 944
Rui Zhao (The Third Research Institute of the Ministry of Public Security. Shanghai, China), Songyang Wu (The Third Research Institute of the Ministry of Public Security. Shanghai, China), Yi Mao (The Third Research Institute of the Ministry of Public Security. Shanghai, China), and Xiao Wang (The Third Research Institute of the Ministry of Public Security. Shanghai, China)

A Multi-Level Semantic Fusion Algorithm Based on Historical Data in Question Answering 950
Rui Zhao (The Third Research Institute of the Ministry of Public Security. Shanghai, China), Songyang Wu (The Third Research Institute of the Ministry of Public Security. Shanghai, China), Yi Mao (The Third Research Institute of the Ministry of Public Security. Shanghai, China), and Ning Li (The Third Research Institute of the Ministry of Public Security. Shanghai, China)

Is Face Recognition Being Abused?——A Case Study from the Perspective of Personal Privacy 957
Jin Zou (Sichuan University, China), Xu Fu (Sichuan University, China), Chi Gong (Sichuan University, China), and Yi Shi (Sichuan University, China)

Research on the Barrage Classification Algorithm for the Protection of Teenager on Video Websites 963
Tiansheng Xu (Capital University of Economics and Business, China) and Rumeng Wang (Capital University of Economics and Business, China)

Construction of Diabetes Knowledge Graph Based on Deep Learning 966
Yonghe Lu (Sun Yat-Sen University, China), Ruijie Zhao (Sun Yat-Sen University, China), Shan Huang (Sun Yat-Sen University, China), and Runjia Liu (Guangdong Medicine Exchange Center Co., Ltd, China)

Explore the Performance of Capsule Neural Network Learning Discrete Features 971
Pengfei Shen (China Nanhu Academy of Electronics and Information Technology (CNAEIT), China), Lun Yan (Army Academy of Armored Forces, China), Yanan Xu (China FAW Group Co., Ltd, China), Jiaqing Wu (China Nanhu Academy of Electronics and Information Technology (CNAEIT), China), and Ting Cai (NingXia University, China)

Application of Deep Learning in Sea States Images Classification 976
Kailin Zhang (Ocean University of China, China), Zhiyang Yu (Ocean University of China, China), and Liqin Qu (Ocean University of China, China)

Landmark Selection Based on Similarity Measure of Vague Soft Sets Considering user Preferences 980
Chang Wei (Guilin University of Technology, China) and Bo Wei (Guilin University of Technology, China)

Practical Research on Computer Aided Translation 985
Lei Kuang (Nanchang Institute of Technology, China)

A Study on the Corpus Construction in Vocabulary Translation Teaching 988
Yonghe Xiao (Nanchang Institute of Technology, China)

Stacked Auto-Encoder Driven Automatic Feature Extraction for Web-Enabled EEG Emotion Recognition 991
Yixiang Dai (Harbin Institute of Technology (Shenzhen), China), Encai Ji (Shenzhen University, Road Xueyuan, China), and Yong Yao (Harbin Institute of Technology (Shenzhen), China)

A Study of College English Translation Teaching in the Age of Artificial Intelligence 998
Saisai Zheng (Nanchang Institute of Technology) and Shengwen Zhu (Jiangxi Academy of Sciences)

Emotional Analysis and Application of Leisure Space Based on Digital Design 1001
Yaying Wang (Beijing University of Agriculture, China) and Mingxing Yao (Beijing University of Agriculture, China)

Author Index **1005**