

2019 12th International Symposium on Computational Intelligence and Design (ISCID 2019)

**Hangzhou, China
14-15 December 2019**

**Volume 1
Pages 1-299**



**IEEE Catalog Number: CFP1960E-POD
ISBN: 978-1-7281-4654-6**

**Copyright © 2019 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:	CFP1960E-POD
ISBN (Print-On-Demand):	978-1-7281-4654-6
ISBN (Online):	978-1-7281-4653-9

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

CURRAN ASSOCIATES INC.
proceedings
.com

2019 12th International Symposium on Computational Intelligence and Design (ISCID) ISCID 2019

Table of Contents

Preface	xiii
Sponsors and Committee Members	xiv
Reviewers	xvi

ISCID 2019: Volume 1

Application Research of Servo Circuit Based on PLC and Configuration Software	3
<i>Jun Ye (Qinghai University, China) and Xindong Gao (Qinghai University, China)</i>	
Case Reasoning Research of Emergency Network Opinion Based on Ontology	7
<i>Beibei Xu (Information Research Institute of Shandong Academy of Sciences), Valeriy Kuzminykh (National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"), Shiwei Zhu (Information Research Institute of Shandong Academy of Sciences), Junfeng Yu (Information Research Institute of Shandong Academy of Sciences), Mingjun Zhang (Information Research Institute of Shandong Academy of Sciences), Sisi Li (Information Research Institute of Shandong Academy of Sciences), and Cuiqin Liu (Information Research Institute of Shandong Academy of Sciences)</i>	
Research on Prediction of Movie Box Office Based on Internet Comments	11
<i>Wei Lu (Communication University of China)</i>	
Maximum Entropy Segmentation of Improved Particle Swarm Optimization	15
<i>Changqing Wang (Henan Normal University), Jiapan Yang (Henan Normal University), and Huili Lv (Henan Normal University)</i>	
Position Measurement of the Hole Group Based on Point Cloud Registration Algorithm	19
<i>Dongyang Zhao (Shanghai University, China), Ming Li (Shanghai University, China), Qingyue Wei (Shanghai University, China), and Yang Yang (Shanghai University, China)</i>	
Grid Diagram Features for Automatic Pipa Fingering Technique Classification	24
<i>Yijia Liu (Soochow University, China), Jingjing Zhang (Soochow University, China), and Zhongzhe Xiao (Soochow University)</i>	

Regulatory Element Parallel Mining Algorithm Based on Bit Combination .29.....	29
<i>Kailong Zhou (Heilongjiang University, China), Jun Lu (Heilongjiang University; Key Laboratory of Database and Parallel Computing of Heilongjiang Province, China), Rengpeng Zhao (Heilongjiang University, China), and Xingfeng Lv (Heilongjiang University; Key Laboratory of Database and Parallel Computing of Heilongjiang Province, China)</i>	
On the Succinctness of Cardinality Constraint Programs and Simple Definite Causal Theories .33.....	33
<i>Yan Zhang (Guangzhou College of Technology and Business, China) and Zhaohui Chen (Zhujiang College, South China Agricultural University, China)</i>	
Cost-Effective Active Learning with Informativeness and Representativeness for Semantic Segmentation.37.....	37
<i>Zhibin Du (China Automotive Technology), Yao Tan (College of Intelligence and Computing, Tianjin University), and Liu Yang (College of Intelligence and Computing, Tianjin University)</i>	
Beam Search Algorithm Based on Dynamic Cutting .41.....	41
<i>Aihua Yin (Jiangxi University of Finance and Economics), Hao Rao (Jiangxi University of Finance and Economics), Dongping Hu (Jiangxi University of Finance and Economics), Jianghai Huang (Jiangxi University of Finance and Economics), and Chong Chen (Jiangxi University of Finance and Economics)</i>	
An Automatic Sleep Stage Classification Approach Based on Multi-spike Supervised Learning .47.....	47
<i>Ziyi Zhao (Northwest Normal University, China), Xianghong Lin (Northwest Normal University, China), and Mengwei Zhang (Northwest Normal University, China)</i>	
Design and Analysis of SPOC Platform Based on IoT for Military Academy .53.....	53
<i>Miao Liu (Air Force Engineering University, China) and DongHao Zhou (Air Force Engineering University, China)</i>	
Development of Measurement System for Angle of Attack Sweeping Aerodynamic Force Test .57.....	57
<i>Qiongfeng Zou (Hypervelocity Aerodynamics Institute, China Aerodynamics Research & Development Center), Junbin Zhang (Hypervelocity Aerodynamics Institute, China Aerodynamics Research & Development Center), Xiaobin Xu (Hypervelocity Aerodynamics Institute, China Aerodynamics Research & Development Center), Ying Luo (Hypervelocity Aerodynamics Institute, China Aerodynamics Research & Development Center), Dewei Zhang (Hypervelocity Aerodynamics Institute, China Aerodynamics Research & Development Center), and Renxi Yang (Hypervelocity Aerodynamics Institute, China Aerodynamics Research & Development Center)</i>	
Research on Support Vector Regression Model Based on Different Kernels for Short-Term Prediction of Ship Motion .61.....	61
<i>Zhihong Nie (Harbin Institute of Technology), Yue Yuan (Harbin Institute of Technology), Dingjie Xu (Harbin Institute of Technology), and Feng Shen (Harbin Institute of Technology)</i>	
Structural Dissimilarity Learning Dictionary via Block Feature Coding for Image Super-Resolution .65.....	65
<i>Xuan Zhu (Northwest University), Yue Cheng (Northwest University), Xin Liu (Northwest University), Qiheng Song (Northwest University), and Dongfeng Mei (Northwest University)</i>	

Multi-Echelon Inventory Optimizations for Divergent Networks by Combining Deep Reinforcement Learning and Heuristics Improvement .69.....	69
<i>Jianpin Zhou (Jimei University, China) and Xiaofan Zhou (Monash University, Australia)</i>	
A Hybrid Hypercube and Spherical Evolution for Optimization .74.....	74
<i>Zonghui Cai (University of Toyama, Japan), Yu Yang (University of Toyama, Japan; Jiangsu Ocean University, China), Xiao Yang (University of Toyama, Japan), Hongwei Dai (Jiangsu Ocean University, China), and Shangce Gao (University of Toyama, Japan)</i>	
Fault Diagnosis of Hydroelectric Sets Based on Singular Value Decomposition and Deep Belief Network .79....	79
<i>Hui Li (Institute of Water Resources & Hydropower Engineering, Xi'an University of technology), Zhichao Fan (Institute of Water Resources & Hydropower Engineering, Xi'an University of technology), Mao Jiao (STATE GRID YANAN ELECTRIC POWER COMPANY), Rong Jia (Institute of Water Resources & Hydropower Engineering, Xi'an University of technology), and Jian Dang (Institute of Water Resources & Hydropower Engineering, Xi'an University of technology)</i>	
An Efficient Algorithm for Frequent Pattern Mining over Uncertain Data Stream .84.....	84
<i>Ming Ye Xie (Heilongjiang University) and Long Tan (Heilongjiang University; Key Laboratory of Database and Parallel Computing of Heilongjiang Province)</i>	
A Multi-navigation Data Fusion Algorithm for Vehicle Localization in Airport .89.....	89
<i>Jing Liu (ATC Lab of CAACSRI, China), Ping Yang (ATC Lab of CAACSRI, China), Xiaojia Yang (ATC Lab of CAACSRI, China), Jiaquan Ye (ATC Lab of CAACSRI, China), and Zhengbo Yang (ATC Lab of CAACSRI, China)</i>	
AHFNet: Aggregation of Hierarchical Features for Crowd Counting .94.....	94
<i>Lijian Mao (Institute of Advanced Research, Zhejiang Dahua Technology CO., LTD.), Feng Wang (Institute of Advanced Research, Zhejiang Dahua Technology CO., LTD.), Yaoyao Lv (Institute of Advanced Research, Zhejiang Dahua Technology CO., LTD.), Zhongshuo Zhuo (Institute of Advanced Research, Zhejiang Dahua Technology CO., LTD.), and Miao Cheng (Institute of Advanced Research, Zhejiang Dahua Technology CO., LTD.)</i>	
Research Progress and Development Trend Evolution of Recommendation System .98.....	98
<i>Zhiqin Jian (Beijing Information Science and Technology University) and Jia Zhang (Beijing Information Science and Technology University)</i>	
Analysis of Residents' Differentiated Power Consumption Behavior Based on Load Classification .104.....	104
<i>Rui Lang (Institute Of Water Resources And Hydro-Electric Engineering, Xi 'an University of Technology), Kaiyan Wang (Institute Of Water Resources And Hydro-Electric Engineering, Xi 'an University of Technology), Jiao Wang (Institute Of Water Resources And Hydro-Electric Engineering, Xi 'an University of Technology), and Rong Jia (Institute Of Water Resources And Hydro-Electric Engineering, Xi 'an University of Technology)</i>	
A Self-Adaptive Mechanism Embedded Gravitational Search Algorithm .108.....	108
<i>Zhenyu Song (Taizhou University), Cheng Tang (University of Toyama), Xingqian Chen (University of Toyama), Shuangyu Song (University of Toyama), and Junkai Ji (Shenzhen University)</i>	

The Effects of Rewards Mechanisms on the Game-Based Chinese Learning System .113.....	
<i>Xin He (Huazhong University of Science and Technology), Hui Yan (Huazhong University of Science and Technology), and Xin Song (Huazhong University of Science and Technology)</i>	
RLayout: Interior Design System Based on Reinforcement Learning .117.....	
<i>Ningqi Wang (Tongji University), Chang Niu (Tongji University), and Zizhong Li (Tongji University)</i>	
Diseases and Pests Identification of Lycium Barbarum Using SE-MobileNet V2 Algorithm .121.....	
<i>Boya Dan (Ningxia University), Xuehong Sun (Ningxia University), and Liping Liu (Ningxia University)</i>	
Study on Surface Characteristics of Linear Traces Based on Wavelet Transform .126.....	
<i>Bingcheng Wang (Shenzhen University, China) and Chang Jing (Guangdong Police College, China)</i>	
Application of DDPG-Based Collision Avoidance Algorithm in Air Traffic Control .130.....	
<i>Han Wen (Sichuan University, China), Hui Li (Sichuan University, China), Zhuang Wang (Sichuan University, China), Xianle Hou (Sichuan University, China), and Kangxin He (Sichuan University, China)</i>	
Random Forest Classifier for Hardware Trojan Detection .134.....	
<i>Yiyao Xiang (University of Electronic Science and Technology of China), Lei Li (University of Electronic Science and Technology of China), and Wanting Zhou (University of Electronic Science and Technology of China)</i>	
Functional Study of Graphene Composite Fiber Seamless Knitted Fabric .138.....	
<i>Xin Wang (Institute of Materials and Textiles, Zhejiang Sci-tech University, China), Zimin Jin (Institute of Materials and Textiles, Zhejiang Sci-tech University, China), Jing Jin (Hangzhou Vocational & Technical College, China), and Jianwei Tao (Zhejiang Bangjie Digital Knitting Share Co. Ltd, China)</i>	
Attention and Multi-layer Fusion for Real-Time Semantic Segmentation .142.....	
<i>Qinghe Cheng (Guangxi Normal University), Canlong Zhang (Guangxi Normal University), Zhixin Li (Guangxi Normal University), and Zhiwen Wang (Guangxi University of Science and Technology)</i>	
Research on Model for Sensory Quality of Yoghurt Based on Stacking .146.....	
<i>Lizhong Xiao (Shanghai Institute of Technology, China), Yuan Liu (Shanghai Institute of Technology, China), and Huaixiang Tian (Shanghai Institute of Technology, China)</i>	
Study on the Appearance and Mechanical Properties of Mulberry Silk Knitted Fabric .150.....	
<i>Kunying Chen (Institute of Materials and Textiles, Zhejiang Sci-tech University), Zimin Jin (Institute of Materials and Textiles, Zhejiang Sci-tech University), Jing Jin (Hangzhou Vocational & Technical College, Hangzhou, China), and Jianwei Tao (Zhejiang Bangjie Digital Knitting Share Co. Ltd, Yiwu, China)</i>	

Research on the Thermal-Wet Comfort Performance for the Knitting Sports Shoes .154.....	154
<i>Kun Chen (Institute of Materials and Textiles, Zhejiang Sci-tech University), Zimin Jin (Institute of Materials and Textiles, Zhejiang Sci-tech University), Jing Jin (Hangzhou Vocational & Technical College, Hangzhou, China), and Jianwei Tao (Zhejiang Bangjie Digital Knitting Share Co. Ltd, Yiwu, China)</i>	
A Multi-dimensional Spam Filtering Framework Based on Threat Intelligence .158.....	158
<i>Xiaopeng Tian (The Third Research Institute of Ministry of Public Security, China) and Di Tang (The Third Research Institute of Ministry of Public Security, China)</i>	
Study on Comfort Performance of Seamless Knitted Fabric with Mosquito-Proof Fiber .163.....	163
<i>Xiaoling Dai (Zhejiang Sci-tech University; Zhejiang Bangjie Digital Knitting Share Co. Ltd, China), Zimin Jin (Zhejiang Sci-tech University; Zhejiang Bangjie Digital Knitting Share Co. Ltd, China), and Jianwei Tao (Zhejiang Sci-tech University; Zhejiang Bangjie Digital Knitting Share Co. Ltd, China)</i>	
Research on FP-Growth Algorithm for Agricultural Major Courses Recommendation in China Open University System .167.....	167
<i>Fang Liu (The Open University of China), Yuhua Su (The Open University of China), Ting Wang (The Open University of China), Jinfeng Fu (The Open University of China), Shougang Chen (The Open University of China), and Chuanjin Ju (The Open University of China)</i>	
Research on Image Recognition of Supermarket Commodity Based on Convolutional Neural Network .171.....	171
<i>Yanmei Liu (Wuhan Institute of Design and Sciences), Ben Liu (Wuhan Institute of Design and Sciences), and Yuda Chen (Wuhan Center of Geological Survey, China Geological Survey)</i>	
Caching Strategy Based on Deep Q-Learning in Device-to-Device Scenario .175.....	175
<i>Shuai Zeng (Chongqing University of Posts and Telecommunications), Yan Ren (Chongqing University of Posts and Telecommunications), Yujie Wang (Chongqing University of Posts and Telecommunications), Tianfeng Zhao (Chongqing University of Posts and Telecommunications), and Zhihua Qian (Chongqing University of Posts and Telecommunications)</i>	
A Negatively Correlation-Based Selection Strategy for Parameter Adaptation in SHADE .180.....	180
<i>Yanting Liu (Changzhou College of Information Technology, China; University of Toyama, Japan), Houtian He (University of Toyama, Japan), Zhe Wang (University of Toyama, Japan), Zesheng Zhang (Black Peony (Group) Co., Ltd., China), Zhe Xu (Changzhou Institute of Technology, China), and Shangce Gao (University of Toyama, Japan)</i>	
Multi-level Creation of Fuzzy Ensembles Through Diversified Settings of Parameters .185.....	185
<i>Han Liu (Cardiff University) and Shyi-Ming Chen (National Taiwan University of Science and Technology)</i>	

Reactive Power Optimization for Distribution Network Based on Improved Bacterial Chemotaxis Particle Swarm Optimization .189.....	
	<i>Qiang Huang (Hunan Provincial Key Laboratory of Grids Operation and Control on Multi-Power Sources Area, China), Jie Tang (Hunan Provincial Key Laboratory of Grids Operation and Control on Multi-Power Sources Area, China), Hui Li (Hunan Provincial Key Laboratory of Grids Operation and Control on Multi-Power Sources Area, China), and Junfei Nie (Hunan Provincial Key Laboratory of Grids Operation and Control on Multi-Power Sources Area, China)</i>
Bottom-up Simplified RefineNet for Human Clothing Estimation .192.....	
	<i>Miao Cheng (ZheJiang Dahua Technology CO.,LTD.) and Ming Liu (ZheJiang Dahua Technology CO.,LTD.)</i>
A New Two-Step Method for Damage Identification in Beam Type Structure .198.....	
	<i>Fan Li (Institute of Computing Technology, China Academy of Railway Sciences), Lingjie Li (Daqin Railway Co., Ltd, China), Jing Han (North University of China), and Zhifei Wang (Institute of Computing Technology, China Academy of Railway Sciences)</i>
Research on Direction of Arrival Estimation of Antenna Array Based on Improved MUSIC Algorithm .204....	
	<i>Yanchun Shen (Information Engineering Institute, Guangzhou Railway Polytechnic, China), Hongyu Sheng (Beijing Key Laboratory of Information Service Engineering, Beijing Union University), and Qiaolian Wang (Information Engineering Institute, Guangzhou Railway Polytechnic, China)</i>
Deep Learning and Recognition of Radar Jamming Based on CNN .208.....	
	<i>Qiang Liu (University of Electronic Science and Technology of China) and Wei Zhang (University of Electronic Science and Technology of China)</i>
A Model Evaluating Complexity of Driving Environment Toward Autonomous Vehicles Using Neural Network....	
213	<i>Gang Li (Chongqing University, China), Ke Wang (Chongqing University, China), Junlan Chen (Chongqing Normal University, China), Yan Long (Chongqing University, China), and Zhoubing Xiong (Changan Auto Company, China)</i>
Application of a Kind of Grey Recursive Network in Passenger Volume Forecasting .217.....	
	<i>Hao Wang (Shanghai Institute of Technology), Meixin Huang (Shanghai Institute of Technology), and Wanli Xie (Nanjing Normal University)</i>
A Densely Connected Transformer for Machine Translation .221.....	
	<i>Zhikui Zhu (Wuhan University of Technology, China), Jun Ruan (Wuhan University of Technology, China), Kehao Wang (Wuhan University of Technology, China), Chenchen Wu (Wuhan University of Technology, China), Guanglu Ye (Wuhan University of Technology, China), and Jingfan Zhou (Wuhan University of Technology, China)</i>
A Novel Approach for Solving the Van Der Pol Equation .225.....	
	<i>Lipu Zhang (Communication University of Zhejiang, China), Xiaoping Zhang (Communication University of Zhejiang, China), and Yongping Sun (Communication University of Zhejiang, China)</i>

Single Target Tracking Using Reliability Evaluation and Feature Selection .228.....	228
<i>Li Wei (Jincheng College, Nanjing University of Aeronautics and Astronautics), Meng Ding (Nanjing University of Aeronautics and Astronautics), and Xu Zhang (Nanjing University of Aeronautics and Astronautics)</i>	
Application of Gray Discrete Bi-Level Linear Programming Model in the Double Emergency Management Network .232.....	232
<i>Wenbing Xue (Institute of Military Transportation, Army Military Transportation University, China), Guoying Pang (Army Military Transportation University, China), and Yan Guo (Army Military Transportation University, China)</i>	
Application Study of Virtual Simulation Experiment in Teaching of Logistics System Planning and Design .236.....	236
<i>Rui Wang (Shandong University of Finance and Economics)</i>	
On the Succinctness of Cardinality Constraint Programs and Canonical Logic Programs .240.....	240
<i>Yan Zhang (Guangzhou College of Technology and Business, China) and Fasheng Cao (Guizhou Minzu University, China)</i>	
A Method of Corn Disease Identification Based on Convolutional Neural Network .245.....	245
<i>Jiya Tian (Electric Information College Changchun Guanghua University), Yong Zhang (Electric Information College Changchun Guanghua University), Yanling Wang (Electric Information College Changchun Guanghua University), Chao Wang (Electric Information College Changchun Guanghua University), Shuyan Zhang (Electric Information College Changchun Guanghua University), and Tonghui Ren (Electric Information College Changchun Guanghua University)</i>	
Sentiment Classification of Online Reviews Based on LDA and Semantic Analysis of Sentimental Words .249.....	249
<i>Yongxia Jing (Qiongtai Normal University, China), Heping Gou (Qiongtai Normal University, China), Chuanyi Fu (Qiongtai Normal University, China), and Wei Sun (Qiongtai Normal University, China)</i>	
A Novel Robust Facial Expression Recognition Approach .253.....	253
<i>Jianjun Wu (Hexi University, China)</i>	
Double Hidden Layer Neural Network for Bearing Fault Detection Using Pre-Extracted Optimal Features .257.....	257
<i>Zhiyu Mou (Beijing Institute of Technology, China) and Zijian Du (Beijing Institute of Technology, China)</i>	
Application of Sliding Mode Control with Leakage Loop Modulation in Dynamic Wireless Charging System of Electric Vehicle .262.....	262
<i>Weijie Zhang (Guilin University of Electronic and Technology), Xingming Fan (Guilin University of Electronic and Technology), Yuxin Zheng (Guilin University of Electronic and Technology), and Xin Zhang (Guilin University of Electronic and Technology)</i>	
Research on Dynamic Wireless Charging Control Strategy of Electric Vehicle Based on Photoelectric Detection and Location .266.....	266
<i>Xin Zhang (Guilin University of Electronic and Technology), Weijie Zhang (Guilin University of Electronic and Technology), Yuxin Zheng (Guilin University of Electronic and Technology), and Xingming Fan (Guilin University of Electronic and Technology)</i>	

Segmentation of Singing, Speech and Instruments in Kunqu Audio Based on Zero-Crossing Rate .270.....	
<i>Gen-Fang Chen (Zhejiang Conservatory of Music) and Ya-Dong Wu (Zhejiang Conservatory of Music)</i>	
An Optimization Model for Restructuring Distribution Network Considering Connecting Constraints of DGs .274.....	
<i>Xiangyang Gong (Ningbo Power Supply Company of State Grid Zhejiang Electric Power Company, China), Yinshu Yu (Ningbo Power Supply Company of State Grid Zhejiang Electric Power Company, China), Liang Huang (Ningbo Power Supply Company of State Grid Zhejiang Electric Power Company, China), Xiaojie Zhu (Ningbo Power Supply Company of State Grid Zhejiang Electric Power Company, China), and Weiyan Qian (the State Key Laboratory of Power Transmission Equipment & System Security and New Technology, Chongqing University, China)</i>	
The Design of High Efficient Battery Charging Circuit Based on STM32 .280.....	
<i>Xiong Hao (Kunming University of Science and Technology Oxbridge College)</i>	
Unsupervised Monocular Depth Estimation with Scale Unification .284.....	
<i>Xinyan Jiang (Nanjing University of Aeronautics and Astronautics) and Meng Ding (Nanjing University of Aeronautics and Astronautics)</i>	
A New Data Sharing Scheme Based on Blockchain .288.....	
<i>Xikai Liu (Central South University)</i>	
Path Planning of Restaurant Service Robot Based on A-Star Algorithms With Updated Weights .292.....	
<i>Liang Cheng (Shanghai Institute of Technology) and Liang Cheng (Shanghai Institute of Technology)</i>	
Author Index 297	

2019 12th International Symposium on Computational Intelligence and Design (ISCID 2019)

**Hangzhou, China
14-15 December 2019**

**Volume 2
Pages 1-297**



**IEEE Catalog Number: CFP1960E-POD
ISBN: 978-1-7281-4654-6**

2019 12th International Symposium on Computational Intelligence and Design (ISCID) ISCID 2019

Table of Contents

Preface .xii.....
Sponsors and Committee Members .xiii.....
Reviewers .xv.....

ISCID 2019: Volume 2

The Observability of T-S Fuzzy Boolean Control Networks .3.....
Yun He (Xidian University, China; Shaanxi Xueqian Normal University, China) and Junmin Li (Xidian University, China)

Optimization of Distributed ADMM Algorithm Based on Minimum Network Latency .7.....
Shuai Zeng (Chongqing University of Posts and Telecommunications), Shuangsheng Wang (Chongqing University of Posts and Telecommunications), and Yi Zhang (Chongqing University of Posts and Telecommunications)

An Optimization Method to Improve the Worst Consistency Level of Hesitant Fuzzy Linguistic Preference Relations .11.....
Zhibin Wu (Sichuan University) and Xue Chen (Sichuan University)

Crack Detection of Track Plate Based on YOLO .15.....
Wenju Li (Shanghai Institute of Technology), Zihao Shen (Shanghai Institute of Technology), and Peigang Li (Shanghai Institute of Technology)

Design of Digital Control High-Voltage DC Power Supply .19.....
Hui Li (Hunan Provincial Key Laboratory of Grids Operation and Control on Multi-power Sources Area, Shaoyang University), Jie Tang (Hunan Provincial Key Laboratory of Grids Operation and Control on Multi-power Sources Area, Shaoyang University), and Li Lin (Hunan Provincial Key Laboratory of Grids Operation and Control on Multi-power Sources Area, Shaoyang University)

Hierarchical Scheduling and Real-Time Analysis for Vehicular Time-sensitive Network .23.....
Yuefei Wang (Hefei University of Technology, China), Fei Huang (Hefei University of Technology, China), Yang Li (Hefei University of Technology, China), Bin Pan (Hefei University of Technology, China), and Yuan Wu (Hefei University of Technology, China)

Real-Time Dynamic Logic Loop Mechanism of Vehicular Network Management Based on Instantaneous Load Sensing .27.....	
	<i>Yuefei Wang (Hefei University of Technology, China), Bin Pan (Hefei University of Technology, China), Yang Li (Hefei University of Technology, China), Fei Huang (Hefei University of Technology, China), and Zhongfei Guo (Hefei University of Technology, China)</i>
Optimizing High-Dimensional Learner with Low-Dimension Action Features .31.....	
	<i>Wenxia Wei (State Key Laboratory of High Performance Computing, China), Liyang Xu (State Key Laboratory of High Performance Computing, China), Minglong Li (State Key Laboratory of High Performance Computing, China), Xiaodong Yi (State Key Laboratory of High Performance Computing, China), and Yuhua Tang (State Key Laboratory of High Performance Computing, China)</i>
High Speed Collision Localization Based on Surface Vibration Processing .35.....	
	<i>Lifu Liu (Hangzhou Dianzi University, China), Jiuwen Cao (Hangzhou Dianzi University, China), and Xuegang Huang (China Aerodynamics Research Development Center, China)</i>
Gait Analysis Based on Angular Velocity During Human Walking on Five Terrains .39.....	
	<i>Hui Zhou (South-Central University for Nationalities)</i>
The Information Retrieval Model for Computer Crime Evidence Based on Domain Ontology .45.....	
	<i>Xuezhi Chi (Shandong Normal University, China)</i>
Optimization Clustering Algorithm Based on Multi-factor Improved SEP in WSN .50.....	
	<i>Runhua Wang (Nanjing University of Posts and Telecommunications, China) and Linghua Zhang (Jiangsu Provincial Engineering Research Center of Telecommunications and Network Technology, China)</i>
Research on Rice Evaluation Method Based on Multi-feature Fusion of Cross-Media .54.....	
	<i>Wen Hu (Harbin University of Commerce, China) and Meichao Song (Harbin University of Commerce, China)</i>
Improvement of SEP Protocol Based on Energy Consumption and Residual Energy .60.....	
	<i>Xiang Sun (Nanjing University of Posts and Telecommunications, China) and Linghua Zhang (Jiangsu Provincial Engineering Research Center of Telecommunications and Network Technology, China)</i>
Algorithm of Mobile Communication Transmission Efficiency in Big Data .64.....	
	<i>Jin Jin (Northwest Minzu University, China), Guoquan Zhang (Northwest Minzu University, China), and Jianfu Zhou (Northwest Minzu University, China)</i>
Application of Rapid Modeling of Information Communication .68.....	
	<i>Jin Jin (Northwest Minzu University, China), Guoquan Zhang (Northwest Minzu University, China), and Ying Pan (Northwest Minzu University, China)</i>
Research on Radar Echo Signal Noise Processing and Adaptive RLS Noise Reduction Algorithm .71.....	
	<i>Jingxin Luo (University of Electronic Science and Technology of China) and Hui Wen (University of Electronic Science and Technology of China)</i>
Blind Detection of Stationary Signals and Periodic Stationary Signals .75.....	
	<i>Wenhai Zhou (University of Electronic Science and Technology of China) and Wenxiang Li (University of Electronic Science and Technology of China)</i>

Comparison of Location Privacy Protection Schemes in VANETs .79.....	79
<i>Yongping Sun (Communication University of Zhejiang) and Xiangyu Bai (Communication University of Zhejiang)</i>	
Study of Via Optimization Problem Based on Estimation of Distribution Algorithm .84.....	84
<i>Yuhong Chi (Xijing University), Yuxuan Yao (Shaanxi Key Laboratory of Integrated and Intelligent Navigation), Laihong Hu (Xi'an Research Institute of High-Tech), and Jinying Wu (Xi'an Research Institute of High-Tech)</i>	
Comparative Analysis of VANET Authentication Architecture and Scheme .89.....	89
<i>Yu Zhang (Inner Mongolia University, China) and Xiangyu Bai (Inner Mongolia University, China)</i>	
A Review of UAV Ferry Algorithms in Delay Tolerant Network .94.....	94
<i>Bo Yang (Inner Mongolia University, China) and Xiangyu Bai (Inner Mongolia University, China)</i>	
Research on Battery State Tracking and Remaining Life Prediction Method Based on Improved Particle Filtering and Reformed Self-Adaptive Fusion Algorithms .99.....	99
<i>Ziquan Jiao (Guilin University of Electronic and Technology, China), Xingming Fan (Guilin University of Electronic and Technology, China), and Xin Zhang (Guilin University of Electronic and Technology, China)</i>	
Remaining Useful Life Prediction of Li-Ion Battery Combining Model-Based Method with Data-Driven Algorithms .103.....	103
<i>Ziquan Jiao (Guilin University of Electronic and Technology, China), Xingming Fan (Guilin University of Electronic and Technology, China), Yuxin Zheng (Guilin University of Electronic and Technology, China), and Xin Zhang (Guilin University of Electronic and Technology, China)</i>	
Exploring Cluster Stocks Based on Deep Learning for Stock Prediction .107.....	107
<i>Fang Liu (Guangdong University of Finance), Xiangxia Li (Guangdong University of Finance & Economics), and Lin Wang (South China University of Technology)</i>	
Rotor Eccentricity Compensation of Bearingless Switched Reluctance Motors Based on Extended Kalman Filter .111.....	111
<i>Chao Tan (Hohai University, China), Honghua Wang (Hohai University, China), and Yi Wang (Hohai University, China)</i>	
Optimum Design of Fractional Order PID Controller for a Servo System Using Hybrid Intelligent Algorithm .116.....	116
<i>Yuhe Xiao (Changsha University of Science & Technology, China) and Maojun Li (Changsha University of Science & Technology, China)</i>	
Mixed Attention-Aware Network for Person Re-identification .120.....	120
<i>Wenchen Sun (Shandong Normal University), Fang'ai Liu (Shandong Normal University), and Weizhi Xu (Shandong Normal University)</i>	
Deep Learning Based Multi-label Chest X-Ray Classification with Entropy Weighting Loss .124.....	124
<i>Shaocong Mo (Zhejiang University, China) and Ming Cai (Zhejiang University, China)</i>	

R-FCN Based Laryngeal Lesion Detection .128.....	
	<i>Bo Luan (Harbin Institute of Technology, China), Yunxu Sun (Harbin Institute of Technology, China), Cheng Tong (Shenzhen Vivolight Medical Device and Technology Co. LTD, China), Yuanxian Liu (Guangzhou University of Chinese Medicine, China), and Hongshun Liu (Harbin Institute of Technology, China)</i>
Prediction of Passenger Flow Based on CNN-LSTM Hybrid Model .132.....	
	<i>Yu Wang (Institute of Computing Technology, China Academy of Railway Sciences), Zhifei Wang (Institute of Computing Technology, China Academy of Railway Sciences), Hongye Wang (Institute of Computing Technology, China Academy of Railway Sciences), Junfeng Zhang (Institute of Computing Technology, China Academy of Railway Science), and Ruilong Feng (Inner Mongolia University of Technology)</i>
Study on Safety Detection and Protection Technology Between Platform and High-Speed Train .136.....	
	<i>Zhifei Wang (Institute of Computing Technology, China Academy of Railway Sciences)</i>
Steady-State Thermal Analysis Simulation of Magnetic Holding Relay Contact Based on Finite Element Analysis .140.....	
	<i>Yuxin Zheng (Guilin University of Electronic and Technology), Xingming Fan (Guilin University of Electronic and Technology), Weijie Zhang (Guilin University of Electronic and Technology), and Xin Zhang (Guilin University of Electronic and Technology)</i>
On the Causality of Students' Courses by Bayesian Networks .144.....	
	<i>Yan Zhang (Guangzhou College of Technology and Business, China)</i>
The Impact of Trade Facilitation Level of G20 Countries on China's Services Export .148.....	
	<i>Qijun Tu (Australian National University, Australia) and Yufu Cao (Kunming University of Science and Technology, China)</i>
Vibration Simulating System of Plate Structure Based on Virtual Experiment .152.....	
	<i>Minghui Zhao (China Coal Research Institute Shanghai Ltd.)</i>
Research on the Evolution Law of Emergency Network Public Opinion .157.....	
	<i>Qizhi Qiu (Wuhan University of Technology), Jinchao He (Wuhan University of Technology), Hui Chen (China Mobile Communications Group Jiangxi Co., Ltd), and Junan Qiu (Wuhan University of Technology)</i>
Ad Hoc Carpooling Prediction Based on Improved kNN .162.....	
	<i>Yong Piao (Dalian University of Technology, China)</i>
Object Depth Measurement from Monocular Images Based on Feature Segments .168.....	
	<i>Chuanqi Zhang (Nanjing University of Aeronautics and Astronautics, China), Yunfeng Cao (Nanjing University of Aeronautics and Astronautics, China), and Meng Ding (Nanjing University of Aeronautics and Astronautics, China)</i>
A Risk Assessment Method for Enterprise Cloud Accounting .172.....	
	<i>Guohua Deng (Jiangnan University) and Chang Xu (Jiangnan University)</i>
A Kernelized Correlation Filter Tracker with Random Sampling Haar-Like Feature .176.....	
	<i>Jiashu Dai (Anhui Polytechnic University, China) and Nan Yan (Anhui Polytechnic University, China)</i>

Manifold Smoothed Class-Specific Discriminant Collaborative Representation for Face Recognition .180.....	
	<i>Yanghui Ma (Zhejiang University of Science and Technology), Wujie Zhou (Zhejiang University of Science and Technology), and Lou Songjiang (Zhejiang University of Science and Technology)</i>
Research on the Smart Home-Care Services System of Chengdu Community Based on “Internet +” .185.....	
	<i>Lin Li (Southwest Jiaotong University) and Yuxun Huang (University of Electronic Science and Technology)</i>
Design of the Active Ageing Game System Based on Humanization Theory .189.....	
	<i>Xinyu Yin (Southwest Jiaotong University, China) and Zhuoyi Zhou (Rochester Institution of Technology)</i>
A Direct Numerical Method for Solving the Föppl-Hencky Equation .193.....	
	<i>Min Zhao (Communication University of Zhejiang), Xiaoping Zhang (Communication University of Zhejiang), and Yongping Sun (Communication University of Zhejiang)</i>
Social Network Analysis Based on GraphSAGE .196.....	
	<i>Lizhong Xiao (Shanghai Institute of Technology), Xinke Wu (Shanghai Institute of Technology), and Guangzhong Wang (Shanghai Academy of Educational Sciences)</i>
The Effect of Road Environment and Type of Vehicles on Road Rage in China .200.....	
	<i>Chunlei Chai (Zhejiang University), Rui Zhao (Zhejiang University), Jinlei Shi (Zhejiang Sci-Tech University), Jiawei Zhou (Zhejiang Sci-Tech University), and Zhen Yang (Zhejiang Sci-Tech University)</i>
Design and Implementation of a Knowledge-Based Expert System Shell .204.....	
	<i>Tianmin Guan (Dalian Jiaotong University, China), Dezhu Zhao (Dalian Jiaotong University, China), and Zhao Mei (Huazhu Medical Technology (Shanghai) Co. Ltd, China)</i>
The Study and Design of Control System of Distribution Network Operation Robot .208.....	
	<i>Yu Yan (State Grid Hunan Electric Power Co.), Shenyi Zhang (Changsha University of Science & Technology, China), Shaosheng Fan (Changsha University of Science & Technology, China), and Youwei Liu (Changsha University of Science & Technology, China)</i>
Ontology Based Security Risk Model for Power Terminal Equipment .212.....	
	<i>Xiao Liang (Global Energy Interconnection Research Institute Co. Ltd, Artificial Intelligence on Electric Power System State Grid Corporation Joint Laboratory (GEIRI), China), Lixin Ma (State Grid Jilin Electric Power Co. Ltd, China), Ningyu An (Global Energy Interconnection Research Institute Co. Ltd, Artificial Intelligence on Electric Power System State Grid Corporation Joint Laboratory (GEIRI), China), Dongxiao Jiang (State Grid Jilin Province Electric Power Research Institute, China), Chenggang Li (State Grid Jilin Province Electric Power Research Institute, China), Xiaona Chen (North China Electric Power University, China), and Lijiao Zhao (North China Electric Power University, China)</i>
Road Rage Influencing Factors Research Based on the Digital News Text Analysis .217.....	
	<i>Chunlei Chai (Zhejiang University), Jiawei Zhou (Zhejiang University), Rui Zhao (Zhejiang University), and Zhen Yang (Zhejiang Sci-Tech University)</i>

Semantic Rule Based RBAC Extension Model for Flexible Resource Allocation .221.....	
<i>Yunfeng Zou (State Grid Jiangsu Electric Power Co., Ltd. Research Institute, China), Junhua Deng (State Grid Jiangsu Electric Power Co., Ltd. Research Institute, China), Chao Xu (State Grid Jiangsu Electric Power Co., Ltd. Research Institute, China), Xiao Liang (Global Energy Interconnection Research Institute Co. Ltd, China), and Xiaona Chen (North China Electric Power University, China)</i>	
Random Walks with GMM Statistical Inference Algorithm for Segmentation of Ground Glass Opacity Pulmonary Nodules .225.....	
<i>Xiangxia Li (Guangdong University of Finance & Economics) and Fang Liu (Guangdong University of Finance)</i>	
Research on Narrowband Anti-Jamming Technology Based on Compressed Sensing .229.....	
<i>Yang Zhong (Dalian University, China), Chunling Liu (Dalian University, China), and Ran Zhang (Dalian University, China)</i>	
An Orthogonal Mixed Chaotic Spread Spectrum Algorithm for Satellite Communication .235.....	
<i>Chunling Liu (Dalian University), Junwei Cheng (Dalian University), and Ran Zhang (Dalian University)</i>	
A Multi-label Classification Approach for ICT Fault Text Analysis .241.....	
<i>Qiang Zhang (Artificial Intelligence on Electric Power System State Grid Corporation Joint Laboratory, Global Energy Interconnection Research Institute Co. Ltd) and Xiaona Chen (North China Electric Power University)</i>	
On the Genetic Regulation of Bayesian Networks .245.....	
<i>Yan Zhang (Guangzhou College of Technology and Business)</i>	
Application of Blockchain in IoT Data Trust and Information Available Technology .250.....	
<i>Shuo Liu (Sun Yat-sen University)</i>	
Risk Assessment of Grid Cascading Failure Accident Chain Considering Typhoon Impact .255.....	
<i>Zhipeng Huang (Heyuan Power Supply Bureau, Guangdong Power Grid Company), Dongfang Wang (Heyuan Power Supply Bureau, Guangdong Power Grid Company), Qia Xiong (Heyuan Power Supply Bureau, Guangdong Power Grid Company), Jinchen Lan (Guangzhou Power Electrical Technology Co., Ltd.), Gelan Zhu (Guangzhou Power Electrical Technology Co., Ltd.), and Feixiang Qin (Guangzhou Power Electrical Technology Co., Ltd.)</i>	
Data Quality Improvement Method Based on Data Correlation for Power Internet of Things .259.....	
<i>Dong Li (State Grid Shandong Electric Power Company, China), Li Yan (State Grid Shandong Electric Power Company, China), Ying Liu (State Grid Shandong Electric Power Company, China), Qilin Yin (State Grid Shandong Electric Power Company, China), Shuangshuang Guo (State Grid Shandong Electric Power Company, China), and Haijie Zheng (State Grid Shandong Electric Power Company, China)</i>	
Micro-blog Short Text Clustering Algorithm Based on Bootstrapping .264.....	
<i>Chunxia Jin (Huaiyin Institute of Technology, China) and Su Zhang (Taiwan Chiao Tung University)</i>	
Short Text Clustering Algorithm Based on Frequent Closed Word Sets .267.....	
<i>Chunxia Jin (Huaiyin Institute of Technology, China) and Qiuchan Bai (Huaiyin Institute of Technology, China)</i>	

A Reactive Power Consumption Model of Inverter Station of LCC-HVDC Based on RBF Neural Network .271	
<i>Chengliang Wang (Jiangsu Frontier Electric Technology Co., Ltd, China), Lin Wang (Hohai University, China), Honghua Wang (Hohai University, China), and Qingsheng Yang (Jiangsu Frontier Electric Technology Co., Ltd, China)</i>	
Analytical Calculation for Temperature Rise of Bearingless Switched Reluctance Motor Based on Lumped-Parameter Simplified Thermal Circuit Model .275.....	
<i>Jingwei Zhang (Hohai University, China), Honghua Wang (Hohai University, China), Sa Zhu (Hohai University, China), Chao Tan (Hohai University, China), and Tianhang Lu (Hohai University, China)</i>	
Evaluating Audio System Dynamic Range Performance under Variable Distortion Condition .279.....	
<i>Desheng Wang (Northeastern University), Yangjie Wei (Northeastern University), Ke Zhang (Northeastern University), and Wang Yi (Northeastern University)</i>	
Malware Detection Method Based on Dynamic Variable Length API Sequence .285.....	
<i>Jinrong Bai (Yuxi Normal University) and Qibin Shi (Yuxi E-government Network Management Center)</i>	
Design and Implementation of a Virtual Treadmill System .289.....	
<i>Yixin Wang (Southeast University, China), Xingsong Wang (Southeast University, China), Mengqian Tian (Southeast University, China), and Wujing Xiao (Southeast University, China)</i>	
Author Index 295	