

2020 International Conference on Intelligent Computing and Human-Computer Interaction (ICHCI 2020)

**Sanya, China
4 – 6 December 2020**



**IEEE Catalog Number: CFP20Z71-POD
ISBN: 978-1-6654-4625-9**

**Copyright © 2020 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

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

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

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

IEEE Catalog Number:	CFP20Z71-POD
ISBN (Print-On-Demand):	978-1-6654-4625-9
ISBN (Online):	978-1-6654-2316-8

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

2020 International Conference on Intelligent Computing and Human-Computer Interaction (ICHCI) **ICHCI 2020**

Table of Contents

Preface	xv
Committee Members	xvii
Reviewers	xviii

Intelligent Visualization Tool Application and Human-Computer Interaction Learning

Research and Application of Node.js Core Technology	1
<i>Xiaoping Huang (Guangzhou University, China)</i>	
Human-Computer Interface Design Based on Design Psychology	5
<i>Yina Liu (Changzhou Institute of Technology)</i>	
Research on Wearable Lower Limbs Control System Based on LabView	10
<i>Liang Liang (Ji Lin University, China), Liu Zhenze (Ji Lin University, China), Cheng Lili (Ji Lin University, China), and Zhang Renhao (Ji Lin University, China)</i>	
The Role of Artificial Intelligence and the Internet of Things in the Development of Medical Radiology (An Experimental Study on Magnetic Resonance Imaging)	17
<i>Mohammad Khalaf Daoud (University Malaysia Terengganu, Malaysia) and Mohammed Otair (Amman Arab University, Jordan)</i>	
The Role of Artificial Intelligence and Autonomous Systems in the Decision-Making Center of the US Mosaic War	21
<i>Na Zhang (National University of Defense Technology, China), Xiaobing Zhu (National University of Defense Technology, China), and Yahong Gou (National University of Defense Technology, China)</i>	
Research on Intelligent Lighting System of Elevator Ground Gap	25
<i>Zhang Yanbin (Shanghai Institute of Special Equipment Inspection and Technical Research, China), Feng Shuangchang (Shanghai Institute of Special Equipment Inspection and Technical Research, China), Li Zheyi (Shanghai Institute of Special Equipment Inspection and Technical Research, China), and Chen Jie (Shanghai Institute of Special Equipment Inspection and Technical Research, China)</i>	

Research on Intelligent Management Method of Urban Literacy Based on Information	29
<i>Yahui Tian (Capital University of Economics and Business, China), Peng Liu (Capital University of Economics and Business, China), and Shuran Lyu (Capital University of Economics and Business, China)</i>	
NBIoT Optimization on Massive Devices Access Load Control	33
<i>Weinan Cao (Xiamen University, China), Jianzheng Wang (Xiamen University, China), Yifeng Zhao (Xiamen University, China), and Lianfen Huang (Xiamen University, China)</i>	
ME-TCAM: Memory-Efficient Ternary Content Addressable Memory Based on Multipumping-Enabled LUTRAM on FPGA	38
<i>Zilin Shi (National University of Defense Technology, China), Hui Yang (National University of Defense Technology, China), Rulin Liu (National University of Defense Technology, China), Jinli Yan (National University of Defense Technology, China), Peng Qiao (National University of Defense Technology, China), and Baosheng Wang (National University of Defense Technology, China)</i>	
The Verification System for Interface Intelligent Perception of Human-Computer Interaction.....	43
<i>Dayan Wang (Air Force Engineering University, China), Jue Qu (Northwestern Polytechnical University, China), Wei Wang (Air Force Engineering University, China), Gangsheng Zhang (Air Force Engineering University, China), and Shuai Zhu (Air Force Engineering University, China)</i>	
Teaching Research on PCO Based on Postgraduate Entrance Exam	49
<i>Yan Chen (Anhui Xinhua University, China) and Decheng Wang (Anhui Xinhua University, China)</i>	
Educational Management System	53
<i>Wei Wei (Xi'an University of Technology, China), Xiaowan Li (Xi'an University of Technology, China), Beibei Zhang (Xi'an University of Technology, China), Xia Liu (Lanzhou University of Finance and Economics, China), Rafal Scherer (Czestochowa University of Technology, Poland), and Robertas Damaševičius (Kaunas University of Technology, Lithuania)</i>	
Multi-Person Pose Estimation on Embedded Device	57
<i>Zhipeng Ma (Huazhong University of Science & Technology, China), Dawei Tian (Huazhong University of Science & Technology, China), Ming Zhang (Huazhong University of Science & Technology, China), and Dingxin He (Huazhong University of Science & Technology, China)</i>	
The Application of Artificial Intelligence in Emotion Recognition	62
<i>He Xia (Jiangxi University of Traditional Chinese, China), Jiedu Wu (Jiangxi University of Traditional Chinese, China), Xunbin Shen (Jiangxi University of Traditional Chinese, China), and Fan Yang (Jiangxi University of Traditional Chinese, China)</i>	
Utilizing BERT for Detecting Aspect Categories on TABSA via Adjusting Self-Attention among Words	66
<i>Hong Hong (Xiamen University, China) and Jiawen Song (Boston University, United States)</i>	

Research Status of Depression Related to Virtual Reality Technology in China	71
<i>Jiede Wu (Jiangxi University of Traditional Chinese Medicine, China), He Xia (Jiangxi University of Traditional Chinese Medicine, China), Fei Li (Jiangxi University of Traditional Chinese Medicine, China), and Jiashun Xie (Jiangxi University of Traditional Chinese Medicine, China)</i>	
Relieve the Control Plane Burdens in Heavy Hitter Detection with Selective Report	75
<i>Zijun Hang (National University of Defense Technology, China), Lin Yang (National University of Defense Technology, China), Jun Zhang (National University of Defense Technology, China), and Yongjie Wang (National University of Defense Technology, China)</i>	
Egg Crack Detection Based on Support Vector Machine	80
<i>Chen Haoran (Zhejiang Normal University, China), Jiang Minlan (Zhejiang Normal University, China), He Chuchu (Zhejiang Normal University, China), and Liu Xiaoxiao (Zhejiang Normal University, China)</i>	
Design Research on Experience System of Ceramic Art Based on Virtual Reality	84
<i>Xiaoping Zhou (Xiamen Institute of Technology, China), Yanmin Liu (Xiamen Institute of Technology, China), and Xiaodong Yang (Sanming University, China)</i>	
Structural Design and Finite Element Analysis of Household Multifunctional Treadmill	91
<i>Li Ming (Dalian University of Science and Technology, China) and Pan Yang (Dalian University of Science and Technology, China)</i>	
A Gesturally Controlled Virtual Musical Instruments for Chinese Guqin	95
<i>Meng Zhang (Tianjin University, China) and Jiawan Zhang (Tianjin University, China)</i>	
Research on the Construction of Heilongjiang Province Agricultural Products Smart Cloud Logistics Platform Based on Internet of Things	101
<i>Yanmei Duan (East University of Heilongjiang)</i>	
Analysis on the Connection Between Nonplayer Character and Artificial Intelligence	105
<i>Mengze Zhao (Beijing No.2 Middle School, China)</i>	

Big Data Counting and Mining Image Signal Processing

Analysis of Multimedia Application and Research Based on Web Pages	109
<i>Ming Liu (Guangzhou University, China) and Xiaoping Huang (Guangzhou University, China)</i>	
The Practice of Computer Network Technology in Electronic Information Engineering	113
<i>Chunyan Liu (Shandong Xiehe University, China)</i>	
TCP/IP Protocol Security Problems and Defenses	117
<i>Zhi Kanmai (Xi'an Fanyi University, China)</i>	
Satellite Images Encryption Review	121
<i>Mahmoud Ahmad Al-Khasawneh (Al-Madinah International University, Malaysia), Waheeb. Abu-Ulbeh (Amman Arab University, Jordan), and Ahmad M. Khasawneh (Amman Arab University, Jordan)</i>	

Processing Optical Fiber Sensing Signals with Compressed Sensing under Special Working Conditions	126
<i>Liu Hang (Chongqing Mei'ansen Technology Co., Ltd., China), Wang Bo (Chongqing Mei'ansen Technology Co., Ltd., China), Lang Daizhi (Chongqing Mei'ansen Technology Co., Ltd., China), and Huang Rongqiang (Chongqing Mei'ansen Technology Co., Ltd., China)</i>	
Feature Selection Based on Niching Particle Swarm Optimization for Omics Data Classification	130
<i>Zhao Xu (Dalian University of Science and Technology, China) and Junshan Yang (Dalian University of Foreign Languages, China)</i>	
Gender Recognition Based on Face Image	134
<i>Meiyan Zhang (Harbin Institute of Technology, China), Jinwei Sun (Harbin Institute of Technology, China), Dan Liu (Harbin Institute of Technology, China), and Qisong Wang (Harbin Institute of Technology, China)</i>	
Deep Supervised Binary Hash Codes for Footprint Image Retrieval	138
<i>Bao Wenxia (AnHui University, China), Hu Wei (AnHui University, China), Liang Dong (AnHui University, China), Wang Nian (AnHui University, China), and Huang Fuxiang (AnHui University, China)</i>	
Spectral Clustering Based Millimeter-Wave Beam Management in V2I Networks	142
<i>ZhaoZhen Lin (Xiamen University, China), YiFeng Zhao (Xiamen University, China), LianFen Huang (Xiamen University, China), and ZhiYuan Shi (Xiamen University, China)</i>	
A Fast Top-k Group Skyline Query Method Based on Skyline Layer	146
<i>Yuntian Yang (National University of Defense Technology, China), Wenbo Lu (National University of Defense Technology, China), and Cong Tang (National University of Defense Technology, China)</i>	
Research on Traffic Data Recovery Based on Tensor Filling and Tensor Matrix Association Analysis	152
<i>Shengbao Yang (Yunnan University, China), Wei He (Yunnan University, China), Bingbing Song (Yunnan University, China), Jiangcheng Xie (Yunnan University, China), Jun Zhou (Yunnan University, China), and Jing He (Yunnan University, China)</i>	
Hessian-Regularized Spectral Clustering for Behavior Recognition	156
<i>Yang Li (Qilu University of Technology, China), Jiangzhou Zhang (Qilu University of Technology, China), Mingyu Nie (Qilu University of Technology, China), and Shuai Wang (Qilu University of Technology, China)</i>	
Design and Implementation of Discipline Competition Management System	160
<i>Wei Wei (Xi'an University of Technology, China), Shaowen Niu (Xi'an University of Technology, China), Beibei Zhang (Xi'an University of Technology, China), Rafal Schererline (Czestochowa University of Technology, Poland), and Robertas Damaševičius (Kaunas University of Technology, Lithuania)</i>	
Research on the Application of Data Encryption Technology in Computer Network Communication Security	164
<i>Kuilang Xia (Heihe University) and Xiaoming Song (Heihe University)</i>	

Research on Road Marking Image Recognition Method Based on Deep Belief Network	168
<i>Zhang L (China Communications Construction Second Engineering Co., Ltd, China), Wang Y (China Communications Construction Second Engineering Co., Ltd, China), Zhu Z (China Communications Construction Second Engineering Co., Ltd, China), and Li X (China University of Geosciences, China)</i>	
The Application Prospect of Virtual Reality Technology in Pathological Gambling	178
<i>Xie Jiashun (Jiangxi University of Traditional Chinese Medicine, China), Mao Jian (Jiangxi University of Traditional Chinese Medicine, China), Yang Fei (Jiangxi University of Traditional Chinese Medicine, China), Wu Jiede (Jiangxi University of Traditional Chinese Medicine, China), and Wang Jian (Nanchang Normal University, China)</i>	
Survey on the Application of Blockchain in Digital Rights Protection	183
<i>Yuan Guichun (Beijing Institute Graphic Communication, China), Feng Liuping (Beijing Institute Graphic Communication, China), Ning Jing (Beijing Institute Graphic Communication, China), and Yang Xiaoyu (Beijing Institute Graphic Communication, China)</i>	
A New Grid Subdivision Method in the Application of 3D Seismic Tomography	188
<i>Zhao Qun-Feng (Tianjin University of Technology, China)</i>	
Automated Unsupervised Identification of Cone Photoreceptor Cells in Adaptive Optics Scanning Laser Ophthalmoscope Images	192
<i>Yiwei Chen (Chinese Academy of Sciences, China), Yi He (Chinese Academy of Sciences, China), Jing Wang (Chinese Academy of Sciences, China; University of Science and Technology of China, China), Lina Xing (Chinese Academy of Sciences, China), and Guohua Shi (Chinese Academy of Sciences, China; University of Science and Technology of China, China)</i>	
Dynamic Resource Prediction in Cloud Computing for Complex System Simulatiuon: A Probabilistic Approach Using Stacking Ensemble Learning	198
<i>Shuai Wang (National University of Defense Technology, China), Yiping Yao (National University of Defense Technology, China), Yuhao Xiao (National University of Defense Technology, China), and Huilong Chen (National University of Defense Technology, China)</i>	
Advances in Computerized Adaptive Testing	202
<i>Yijun Yuan (Jiangxi University of Traditional Chinese Medicine, China), He Xia (Jiangxi University of Traditional Chinese Medicine, China), Yong Han (Jiangxi University of Traditional Chinese Medicine, China), and Maorong Hu (Jiangxi University of Traditional Chinese Medicine, China)</i>	
Multi-Depth Learning with Multi-Attention for Fine-Grained Image Classification	206
<i>Zuhua Dai (Northwest Normal University, China), Hongyi Li (Northwest Normal University, China), Kelong Li (Northwest Normal University, China), and Anwei Zhou (Northwest Normal University, China)</i>	

Construction Technology of Large Scale Knowledge Maps in Customer Service Field of Power Grid	213
<i>Shuang Shuang Guo (State Grid Shandong Electric Power Company, China), Yun Pan (State Grid Shandong Electric Power Company, China), Wen Bin Zhang (State Grid Shandong Electric Power Company, China), Chao Ma (State Grid Shandong Electric Power Company, China), Yu Jia Wang (State Grid Shandong Electric Power Company, China), and Shi Chao Zhang (State Grid Shandong Electric Power Company, China)</i>	
Knowledge Graph Construction of Thangka Icon Characters Based on Neo4j	218
<i>Sujie Cheng (Northwest Minzu University, China), Tiejun Wang (Northwest Minzu University, China), Xiaoran Guo (Northwest Minzu University, China), and Yu Wang (Northwest Minzu University, China)</i>	
Matlab Practice Research on Calculation of Internal Force and Deformation of Members in the Course	222
<i>Gerile Gerile (Hulunbuir University)</i>	
Virtual Reality Games Based on Brain Computer Interface	227
<i>Rongxiang Zhang (RMIT University, Australia)</i>	
Overview of Medical Knowledge Mapping Research	231
<i>Peng Shengguang (China University of Mining and Technology, China; Pingxiang University, China)</i>	
Research on Network Maintenance Interoperability Evaluation of Maintenance Support Information System	235
<i>Xia Wei (Army Infantry University, China), Wang Yadong (Army Infantry University, China), Shi Quan (Army Infantry University, China), and Yin Shizhuang (Army Infantry University, China)</i>	
Design of New Media Data Processing System	239
<i>Hui Shan (Dalian University of Science and Technology, China), Hongshen Zhang (Dalian University of Science and Technology, China), and Xueming Mi (Dalian University of Science and Technology, China)</i>	
Spatial Joint Upsampling Based Crowd Counting	243
<i>Xiangwu Ding (Donghua University, China) and Siyin Lan (Donghua University, China)</i>	
Scheduling Optimization of Real-Time IOT System Based on RNN	249
<i>Shenling Liu (National University of Defence Technology, China), Chunyuan Zhang (National University of Defence Technology, China), and Yujiao Chen (National University of Defence Technology, China)</i>	

Machine Deep Learning and Algorithm Model Recognition

Collaborative Gaussian Mixture Model for Background Subtraction	254
<i>Yongxin Jiang (Dalian Navy Academy, China), Xing Jin (Dalian Navy Academy, China), Jun Tang (Dalian Navy Academy, China), and Zhiyou Zhang (Dalian Navy Academy, China)</i>	

Dynamic Path Planning of Mobile Robot Based on Artificial Potential Field	259
<i>Naifeng He (Chinese Academy of Sciences, China), Yifan Su (Shenyang Ligong University, China), Jilu Guo (Shenyang Ligong University, China), Xiaoliang Fan (Chinese Academy of Sciences, China), Zihong Liu (Shenyang Ligong University, China), and Bolun Wang (Shenyang Ligong University, China)</i>	
Design and Implementation of E-Commerce Recommendation System Model Based on User Clustering	265
<i>ZHONG XiaoYing (Nanfang College of Sun Yat-sen University, China) and SI MingYuan (Nanfang College of Sun Yat-sen University, China)</i>	
A Summary of Convolution Neural Network Compression and Acceleration Technology	269
<i>Bingzhen Li (Naval Aeronautical University, China), Wenzhi Jiang (Naval Aeronautical University, China), Jiaojiao Gu (Naval Aeronautical University, China), and Ke Liu (Naval Aeronautical University, China)</i>	
A School Bullying Detecting Algorithm Based on Motion Recognition and Speech Emotion Recognition	276
<i>Chuqiao Wei (Harbin Institute of Technology, China), Hua Zhang (Harbin Institute of Technology, China), Liang Ye (Harbin Institute of Technology, China), and Fanchao Meng (Harbin Institute of Technology, China)</i>	
Unmanned Aerial Vehicle Classification and Detection Based on Deep Transfer Learning	280
<i>Wei Meng (Henan University, China; Henan Key Laboratory of Big Data Analysis and Processing, China; Henan Engineering Laboratory of Spatial Information Processing, China) and Meng Tian (Henan University, China; Henan Key Laboratory of Big Data Analysis and Processing, China; Henan Engineering Laboratory of Spatial Information Processing, China)</i>	
Temperature Compensation and Amplitude Prediction in Ultrasonic Measurement Based on BP Neural Network Mode	286
<i>Wanjia Gao (North University of China, China), Fei Li (North University of China, China), Ran Yang (North University of China, China), and Wenyi Liu (North University of China, China)</i>	
Research on the Application of Deep Learning in Computer Interlocking System Simulation Test Platform	290
<i>Ji Yi (Lanzhou Jiaotong University, China), He Tao (Gansu Research Center of Automation Engineering, China), and Wu Yong Cheng (Gansu Research Center of Automation Engineering, China)</i>	
Defect Detection Algorithm of Anti-Vibration Hammer Based on Improved Cascade R-CNN	294
<i>Bao Wenxia (Anhui University, China), Ren Yangxun (Anhui University, China), Liang Dong (Anhui University, China), Yang Xianjun (Chinese Academy of Sciences, China), and Xu Qiuju (Anhui University, China)</i>	
Collision Warning and Avoidance System	298
<i>Xu Peisen (South West Jiaotong University)</i>	

Techniques for Aerial Target Recognition Based on Belief Rule Base and Evidential Reasoning	304
<i>Jiadi Liu (National University of Defense Technology, China), Cong Zhou (National University of Defense Technology, China), and Jian Huang (National University of Defense Technology, China)</i>	
Path Planning Algorithm for UAV in Complex Environment Based on State Change	310
<i>Qijie Chen (Naval Aviation University, China), Tinglong Yan (Naval Aviation University, China), Taoyu Wang (Naval Aviation University, China), and Tong Zhang (Naval Aviation University, China)</i>	
Research on Variable Scale Algorithm	316
<i>Wei Wei (Xi'an University of Technology, China), Mingwei Hui (Xi'an University of Technology, China), BeiBei Zhang (Xi'an University of Technology, China), Rafal Scherer (Czestochowa University of Technology, Poland), Fan Gao (Xi'an University of Technology, China), and Robertas Damaševičius (Kaunas University of Technology, Lithuania)</i>	
Modeling and Simulation of Network-on-Chip Routing Algorithm Based on OPNET	323
<i>Fei Li (North University of China, China), Wanjia Gao (North University of China, China), Liangchang Chen (North University of China, China), and Wenyi Liu (North University of China, China)</i>	
Challenges and Opportunities of Language Representation Model	328
<i>Ziang Zhou (Indiana University Bloomington, USA), Ziqian Li (Jilin University, China), and Jiahong Lu (Pennsylvania State University, USA)</i>	
Congestion-Aware and Load-Aware Adaptive Routing Algorithms for Communication Networks	333
<i>Liu Lu (Xi'an Polytechnic University, China), Yang Yanfei (Xi'an Polytechnic University, China), Lei Qianqian (Xi'an Polytechnic University, China), and Wang Huhu (Xi'an Polytechnic University, China)</i>	
A Deep Learning Based Approach to Detect Code Clones	337
<i>Guangjie Li (National Innovation Institute of Defense Technology, China), Yi Tang (National Innovation Institute of Defense Technology, China), Xiang Zhang (National Innovation Institute of Defense Technology, China), and Biyi Yi (National Innovation Institute of Defense Technology, China)</i>	
Design and Implementation of Forward Modeling Algorithm for Anisotropic Seismic Waves	341
<i>Wei Wei (Xi'an University of Technology, China), Fan Gao (Xi'an University of Technology, China), BeiBei Zhang (Xi'an University of Technology, China), Rafal Scherer (Czestochowa University of Technology, Poland), Mingwei Hui (Xi'an University of Technology, China), and Robertas Damasevicius (Kaunas University of Technology, Lithuania)</i>	
U.S. Pandemic Prediction Using Regression and Neural Network Models	351
<i>Tianxiao Liu (Dalian Yuming Senior High School, China)</i>	

Online Job Search and Recruitment Platform for College Students Based on SSH	355
<i>Wei Wei (Xi'an University of Technology, China), Bin Wang (Xi'an University of Technology, China), Beibei Zhang (Xi'an University of Technology, China), Rafal Scherer (Czestochowa University of Technology, Poland), and Robertas Damaševičius (Kaunas University of Technology, Lithuania)</i>	
Application of Virtual Reality Technology in Psychotherapy	359
<i>Jiuwei Li (Jiangxi University of Traditional Chinese Medicine, China), Haoyu Yang (Jiangxi University of Traditional Chinese Medicine, China), Fei Li (Jiangxi University of Traditional Chinese Medicine, China), and Jiede Wu (Jiangxi University of Traditional Chinese Medicine, China)</i>	
A Hybrid Machine Learning Model for Sales Prediction	363
<i>Jingru Wang (University of Maryland, United States)</i>	
Deep Neural Network Pruning Algorithm Based on Particle Swarm	367
<i>Shengnan Zhang (Beijing Power Exchange Center, China), Shanshan Hong (State Grid Electric Power Research Institute Co., Ltd, China), Chao Wu (State Grid Electric Power Research Institute Co., Ltd, China), Yu Liu (East China Normal University, China), and Xiaoming Ju (East China Normal University, China)</i>	
Review on Deep Based Object Detection	372
<i>Pingzhu Shi (Harbin Institute of Technology, China) and Chenfei Zhao (Zhengzhou University, China)</i>	
Supervised Machine Learning Chatbots for Perinatal Mental Healthcare	378
<i>Ruyi Wang (University of Sheffield), Jiankun Wang (Shenzhen Sunline Tech Co., Ltd, China), Yuan Liao (University of Sheffield), and Jinyu Wang (Haibin Engineering University)</i>	
Review of Text Analysis Based on Deep Learning	384
<i>Liu Ying (Jilin University of Finance and Economics, China) and Li Huidi (Jilin University of Finance and Economics, China)</i>	
Vertical Oil-in-Water Flow Pattern Identification with Deep CNN-LSTM Network	389
<i>Niu Xiangyang (Tianjin University of Science & Technology, China), Gao Yiyang (Tianjin University of Science & Technology, China), Wang Runna (Tianjin University of Science & Technology, China), and Du Meng (Tianjin University of Science & Technology, China)</i>	
An Improved Evolution Algorithm of Immune Detectors for Network Data Analysis	393
<i>Yan Zhang (Leshan Normal University, China) and Caiming Liu (Leshan Normal University, China)</i>	
Multi-Model Inference Acceleration on Embedded Multi-Core Processors	400
<i>Peiqi Shi (Zhejiang Lab, China), Feng Gao (Zhejiang Lab, China), Songtao Liang (Zhejiang Lab, China), and Shanjin Yu (Zhejiang Lab, China)</i>	
Improved Method for Generative Adversarial Nets	404
<i>Yuan Chen (Hangzhou Applied Acoustics Research Institute, China), He Lu (Hangzhou Applied Acoustics Research Institute, China), Jie Yu (Hangzhou Applied Acoustics Research Institute, China), and Hao Wang (Hangzhou Applied Acoustics Research Institute, China)</i>	

Research on Identification of Network Public Opinion Information Based on Graph Convolutional Networks	409
<i>Yaoyi Xi (PLA Strategic Support Force Information Engineering University, China), Jiaxin Wang (PLA Strategic Support Force Information Engineering University, China), Yongwang Tang (PLA Strategic Support Force Information Engineering University, China), Shumin Qiao (PLA Strategic Support Force Information Engineering University, China), Rong Cao (PLA Strategic Support Force Information Engineering University, China), and Xin Liu (PLA Strategic Support Force Information Engineering University, China)</i>	
Research Progress of Face Recognition Based on Deep Learning	419
<i>Bo Ma (Peking University, China)</i>	
Analysis on Deep Reinforcement Learning in Industrial Robotic Arm	426
<i>Hengyue Guan (Shandong University, Chian)</i>	
Author Index	431