

2024 International Conference on Ubiquitous Computing and Communications (IUCC 2024)

**Chengdu, China
20-22 December 2024**



**IEEE Catalog Number: CFP24IUC-POD
ISBN: 979-8-3315-1200-2**

**Copyright © 2024 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:	CFP24IUC-POD
ISBN (Print-On-Demand):	979-8-3315-1200-2
ISBN (Online):	979-8-3315-1199-9

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

2024 International Conference on Ubiquitous Computing and Communications (IUCC) **IUCC 2024**

Table of Contents

Message from the IUCC 2024 General Chairs	xxvii
Message from IUCC 2024 Program Chairs	xxviii
IUCC 2024 Organizing Committee	xxix
IUCC 2024 Program Committee	xxx
Message from the CIT 2024 General Chairs	xxxi
Message from CIT 2024 Program Chairs	xxxii
CIT 2024 Organizing Committee	xxxiii
CIT 2024 Program Committee	xxxiv
Message from the DSCI 2024 General Chairs	xxxvi
Message from DSCI 2024 Program Chairs	xxxvii
DSCI 2024 Organizing Committee	xxxviii
DSCI 2024 Program Committee	xxxix
Sponsors	xl

The 23rd International Conference on Ubiquitous Computing and Communications (IUCC-2024)

Research on the Construction of Content Security Assessment Model Based on Machine Learning	1
<i>Qiao Zhe (China Mobile Ltd Information Security management and operation Center, China), Hui Ouyang (Aspire Information Technology (Beijing) Company Limited, China), Yadong Shang (China Mobile Ltd Information Security management and operation Center, China), Dongxiao Zhao (Aspire Information Technology (Beijing) Company Limited, China), and Shikun Kang (Aspire Information Technology (Beijing) Company Limited, China)</i>	
Large Model Cognitive Radio: Software-Defined Radios and Advanced Language Models	8
<i>J. de Curtò (BARCELONA Supercomputing Center, Spain; Universidad Pontificia Comillas, Spain; Universidad Oberta de Catalunya, Spain) and I. de Zarzà (Universidad Francisco de Vitoria, Spain; Universidad de Zaragoza, Spain; Universitat Oberta de Catalunya, Spain)</i>	

Dynamic Scheduling Algorithm for Beam Hopping Switching in Low Earth Orbit Constellations Aimed at Non-Uniform Traffic Demands	15
<i>Yi Zhang (Chongqing University of Posts and Telecommunications, China), Jie Wang (Chongqing University of Posts and Telecommunications, China), Shuaijun Liu (Institute of Software Chinese Academy of Sciences, China), Lei Tian (Institute of Tracking and Telecommunication Technology, China), and Yuanpeng Li (Institute of Software Chinese Academy of Sciences, China)</i>	
Bottleneck Link Identification and Capacity Optimization in Satellite Constellations: A Residual Network-Based Framework	21
<i>Junzhi Li (Institute of Software Chinese Academy of Sciences, China; Shanghai Jiao Tong University, China), Lixiang Liu (Institute of Software Chinese Academy of Sciences, China), Fei Zong (Qian Xuesen Laboratory, China Academy of Space Technology, China), and Shuaijun Liu (Institute of Software Chinese Academy of Sciences, China)</i>	
Modulation Waveform Recognition Method Based on Feature Fusion	28
<i>Hui Ha (National Space Science Center, Chinese Academy of Sciences, China), Xue Li (National Space Science Center, Chinese Academy of Sciences, China), Xiang Gao (National Space Science Center, Chinese Academy of Sciences, China), Ying Li (Beijing Institute of Tracking and Telecommunications Technology, China), Yuanhao Ma (National Space Science Center, Chinese Academy of Sciences, China), Yanan Fan (National Space Science Center, Chinese Academy of Sciences, China), and Yi Yan (National Space Science Center, Chinese Academy of Sciences, China)</i>	
UAV-Assisted Relay Communication: A Multi-Agent Deep Reinforcement Learning Approach	34
<i>Longqian Huang (Northwest A&F University, China), Hongguang Sun (Northwest A&F University, China), Yinjie Gao (Northwest A&F University, China), Hongming Zhang (Northwest A&F University, China), and Shuqin Li (Northwest A&F University, China)</i>	
FedADP: Unified Model Aggregation for Federated Learning with Heterogeneous Model Architectures	42
<i>Jiacheng Wang (Shandong University, China), Hongtao Lv (Shandong University, China), and Lei Liu (Shandong University, China; Shandong Research Institute of Industrial Technology, China)</i>	
Artificial Intelligence Workloads Forecasting Based on Correlation Multi-Channels Fusion	48
<i>Yao Lu (Anhui University, China), Haoming Zhang (Anhui University, China), Xiaoqin Yu (Anhui University, China), Jiayan Gu (Hefei University, China), Jie Cui (Anhui University, China), Hong Zhong (Anhui University, China), Lu Liu (University of Exeter, China), and John Panneerselvam (University of Exeter, China)</i>	
Mar-DSL: A Domain-Specific Language for IoT Systems Implementation	56
<i>Jiajun Chen (University of Electronic Science and Technology of China (UESTC), China), Jiyi Wu (University of Electronic Science and Technology of China (UESTC), China), Yuan Zuo (Defense Innovation Institute, Chinese Academy of Military Science, China; Intelligent Game and Decision Laboratory, Chinese Academy of Military Science, China), Luwei Fu (University of Electronic Science and Technology of China (UESTC), China), and Zhiwei Zhao (University of Electronic Science and Technology of China (UESTC), China)</i>	

A Clinical Data Based Framework for Predicting Mortality and Length-of-Stay in Pneumonia Patients	63
<i>Rui Gao (University of Exeter, UK), Robert C. Free (University of Leicester, UK), Ashiq Anjum (University of Leicester, UK), Xiang Sun (University of Exeter, UK), Gerrit Woltmann (University of Leicester, UK), and Lu Liu (University of Exeter, UK)</i>	
Data Optimisation of Machine Learning Models for Smart Irrigation in Urban Parks	70
<i>Nasser Ghadiri (Western Sydney University, Australia), Bahman Javadi (Western Sydney University, Australia), Oliver Obst (Western Sydney University, Australia), and Sebastian Pfautsch (Western Sydney University, Australia)</i>	
VAE-Based Fault Diagnosis for Microservice System	78
<i>Shaokang Xu (Fuzhou University, China) and Yanhua Liu (Fuzhou University, China)</i>	
Performance Difference Based Lazy Aggregation in Federated Learning Human Activity Recognition	86
<i>Qiu Zhang (Fuzhou University, China) and Yanhua Liu (Fuzhou University, China)</i>	
Point Cloud Completion Network Based on Dynamic Feature Selection	93
<i>Yu Li (Guilin University of Electronic Science and Technology, China), Zhenming Yu (Guangxi Key Laboratory of Machine Vision and Intelligent Control, Wuzhou University, China), Jianguang Huang (Guangxi Key Laboratory of Machine Vision and Intelligent Control, Wuzhou University; Guangxi Colleges and Universities Key Laboratory of Intelligent Software, Wuzhou University, China), Meini Lv (Guangxi Key Laboratory of Machine Vision and Intelligent Control, Wuzhou University, China), and Jiawei Deng (Guangxi Key Laboratory of Machine Vision and Intelligent Control, Wuzhou University; Guangxi Colleges and Universities Key Laboratory of Intelligent Software, Wuzhou University, China)</i>	

The 23rd International Conference on Computer and Information Technology (CIT-2024)

COPS: A Coroutine-Based Priority Scheduling Framework Perceived by the Operating System	99
<i>Fangliang Zhao (Tsinghua University), Donghai Liao (Beijing Institute of Technology), Jingbang Wu (Beijing Technology and Business University), Huimei Lu (Beijing Institute of Technology), and Yong Xiang (Quan Cheng Laboratory & Tsinghua University)</i>	
Optimal Radio Labeling of Cartesian Product of Stars and Square Mesh Networks	107
<i>Linlin Cui (Qinghai Normal University, China) and Feng Li (Qinghai Normal University, China)</i>	
Model-Based Attack Planning Strategies for Automated Penetration Testing Exercises	115
<i>Simon Yusuf Enoch (School of Information Technology, Whitecliffe College, New Zealand) and Dan Dongseong Kim (The University of Queensland, Australia)</i>	

Threat-Specific Risk Assessment for IP Multimedia Subsystem Networks Based on Hierarchical Models	123
<i>Abdullah Ehsan Shaikh (School of Information Technology, Whitecliffe College, New Zealand) and Simon Yusuf Enoch (School of Information Technology, Whitecliffe College, New Zealand)</i>	
Citation Classification Based on Formal Concept-Enhanced Graph Convolutional Network	131
<i>Kai Wu (Shaanxi Normal University, China), Xinyuan Zhu (Shaanxi Normal University, China), Fei Hao (Shaanxi Normal University, China), Xu Zhang (University of Leeds, UK), and Haozhe Wang (University of Exeter, UK)</i>	
An Entity Enhancement-Based Approach for Joint Extraction of Entity Relationships in Medical Texts	139
<i>Yonglu Hong (Fuzhou University, China) and Yanhua Liu (Fuzhou University, China)</i>	
A Defense Method for Mitigating Poisoning Attacks in Federated Learning Using ACGAN	147
<i>Yuting Han (Fuzhou University, China) and Yanhua Liu (Fuzhou University, China)</i>	
Research on Interpretability of Malware Detection Models for Image-Based Analysis	154
<i>Tingzhao Shen (Fuzhou University, China), Jiaqi Li (Fuzhou University, China), Lubin Wu (Fujian Fuhai Chuang Petrochemical Co., Ltd, China), and Yanhua Liu (Fuzhou University, China)</i>	
FPDANet: A Multi-Section Classification Model for Intelligent Screening of Fetal Ultrasound	162
<i>Minglang Chen (Wuzhou University, China), Jie He (Hunan University, China), Caixu Xu (Wuzhou University, China), Bocheng Liang (Department of Ultrasound Shenzhen Maternal and Child Healthcare Hospital, China), Shengli Li (Department of Ultrasound Shenzhen Maternal and Child Healthcare Hospital, China), Guannan He (Department of Ultrasound Sichuan Provincial Maternity and Child Healthcare Hospital, China), and Xiongjie Tao (Macau University of Science and Technology, China)</i>	

The 7th International Conference on Data Science and Computational Intelligence (DSCI-2024)

Mutual Attention Network for Multi-Label Emotion Recognition with Graph-Structured Label Representations	168
<i>Xiaoyu Dong (Xihua University, China), Xiaoliang Chen (Xihua University, China), Yanli Li (Xihua University, China), Jia Liu (Xihua University, China), Yajun Du (Xihua University, China), and Xianying Li (Xihua University, China)</i>	
Protodetect: An Enhanced Prototype Network for Few-Shot Out-of-Distribution Detection	176
<i>Minglei Zhao (Xihua University, China), Xiaoliang Chen (Xihua University, China), Yanli Li (Xihua University, China), Jia Liu (Xihua University, China), Yajun Du (Xihua University, China), and Xianying Li (Xihua University, China)</i>	

Recommendation Algorithms Combining Comment Text Semantics and Occurrence of Commodity ...	184
<i>Wenlong Luo (Shaanxi Normal University, China), Li Zhang (Shaanxi Normal University, China), Yachao Cui (Shaanxi Normal University, China; Qinghai University, China), and Yanzheng Jin (National University of Singapore, Singapore)</i>	
Classroom Concentration Analysis System Based on YOLOV5	192
<i>Liang Wang (Wuzhou University, China), Chen Hu (Wuzhou University, China), Xin Liu (Wuzhou University, China), Jing-Yi Lan (Wuzhou University, China), and Zhi-Min Yan (Wuzhou University, China)</i>	
Analysis of Communications and Network Stability in RIS-Assisted UAV-USV Collaborative System	199
<i>Yangzhe Liao (Wuhan University of Technology, China), Zhenjie Wang (Wuhan University of Technology, China), and Siyu Xia (Wuhan University of Technology, China)</i>	
Analysis of UAVs Flight Energy Minimization for RIS-Assisted Multi-UAV-Enabled MEC Network....	205
<i>Yangzhe Liao (Wuhan University of Technology, China), Rong pan (Wuhan University of Technology, China), Ke Zhang (Wuhan University of Technology, China), and Siyu Xia (Wuhan University of Technology, China)</i>	
Performance Comparison of RIS-Assisted Transmission Schemes Over Fading Wireless Channels .	213
<i>Yangzhe Liao (Wuhan University of Technology, China), Siheng Wang (Wuhan University of Technology, China), Ke Zhang (Wuhan University of Technology, China), and Siyu Xia (Wuhan University of Technology, China)</i>	
A 16.5nV/Hz Chopper Amplifier with AC-Coupled Technique for Ripple Reduction	220
<i>Jianhai Yu (Wuzhou University, China), Xing Zhong (Guangxi University, China), Yongkang Shen (Guangxi University, China), and Jinhuan Zhang (Wuzhou University, China)</i>	
Microscopic Detection Approach of Chinese Herbal Medicine Base on YOLOv8	226
<i>Jinquan Mo (Wuzhou University, China), Zizhen Peng (Wuzhou University, China), Wanying Li (Wuzhou University, China), Chengfeng Wei (Wuzhou University, China), Guangyao Pang (Wuzhou University, China), and Wei Fu (Tianjin Tianxing Technology Development Co., Ltd)</i>	

The 11th International Workshop on Big Data Research and Application 2024 (BDRA 2024)

Session BDRA_01: Big Data Research

Analysis of Video Service Perception in Polymorphic Network	231
<i>Bei Li (Research Institute, China United Network Communication Corporation, China), Zixiang Di (Research Institute, China United Network Communication Corporation, China), Tian Xiao (Research Institute, China United Network Communication Corporation, China), Guanghai Liu (Research Institute, China United Network Communication Corporation, China), Chengjie Wu (Research Institute, China United Network Communication Corporation, China), Yan Zhang (Research Institute, China United Network Communication Corporation, China), Lu Zhi (Research Institute, China United Network Communication Corporation, China), Zhaoning Wang (Research Institute, China United Network Communication Corporation, China), Lexi Xu (Research Institute, China United Network Communication Corporation, China), and Chen Cheng (Research Institute, China United Network Communication Corporation, China)</i>	
Design Method of RIS Beamforming Codebook Based on Network Control Repeater	237
<i>Bao Guo (China Mobile Communication Group Design Institute Co., Ltd, China), Jing Guo (University of Oxford), Yang Zhang (China Mobile Communication Group Co., Ltd, China), Yingtao Meng (China Mobile Communication Group Design Institute Co., Ltd, China), Hongbo Long (China Mobile Communication Group Design Institute Co., Ltd, China), and Pengcheng Liu (China Mobile Communication Group Design Institute Co., Ltd, China)</i>	
Streaming Service Optimization Based on Native Artificial Intelligence Architecture	243
<i>Bao Guo (China Mobile Communication Group Design Institute Co., Ltd, China), Jing Guo (University of Oxford, China), Yingtao Meng (China Mobile Communication Group Design Institute Co., Ltd, China), Jinhu Shen (China Mobile Communication Group Design Institute Co., Ltd, China), Qintian Wang (China Mobile Communication Group Design Institute Co., Ltd, China), and Yang Zhang (China Mobile Communication Group Co., Ltd, China)</i>	
AHP and Big Data Based Brand Value Enhancement Model for Telecom Operators	249
<i>Jiao Zhu (China Unicom Research Institute, China), Ying Li (China Post & Capital Fund Management Co., Ltd, China), Rongfang Zhang (China Unicom Research Institute, China), Xing Tai (Unicom Vsens Communications Co., Ltd, China), Junjiang Chen (ZTE Corporation, China), and Rui Li (China Unicom Research Institute, China)</i>	

Big Data Based Security Assessment Method and System of Foreign Investment	256
<i>Heng Zhang (Research Institute, China United Network Communications Corporation, China), Bing Yan (China Unicom Vsens Telecommunications Corporation, China), Junsheng Zhao (China Association of Communication Enterprises, China), Xueqing Zhao (China Railway Electrification Engineering Group Co., China), Lexi Xu (Research Institute, China United Network Communications Corporation, China), Xinzhou Cheng (Research Institute, China United Network Communications Corporation, China), Lijuan Cao (Research Institute, China United Network Communications Corporation, China), Kun Chao (Research Institute, China United Network Communications Corporation, China), Chen Cheng (Research Institute, China United Network Communications Corporation, China), and Tianyi Wang (Research Institute, China United Network Communications Corporation, China)</i>	
Data Empowerment Evaluation: A Revenue Estimation Model for Scenario-Based Applications in Gas Metering	262
<i>Yufei Li (China Academy of Information and Communications Technology, China) and Pengcheng Guo (Shandong University of Finance and Economics, China)</i>	
Intelligent Optimization of Handover Parameters in 5G Networks Based on User Service Experience	268
<i>Zixiang Di (Research Institute, China Unicom Network Communications Corporation, China), Feibi Lyu (Research Institute, China Unicom Network Communications Corporation, China), Guoping Xu (Group Company, China Unicom Network Communications Corporation, China), Bei Li (Research Institute, China United Network Communication Corporation, China), Xinzhou Cheng (Research Institute, China United Network Communication Corporation, China), Lu Zhi (Research Institute, China United Network Communication Corporation, China), Wenqian Guo (GRINM Additive Manufacturing Technology Co., Ltd., China), Zhipu Xie (Research Institute, China United Network Communication Corporation, China), Xiaomeng Zhu (Research Institute, China United Network Communication Corporation, China), and Lexi Xu (Research Institute, China United Network Communication Corporation, China)</i>	
A Novel Front-End Visual Graph Layout Scheme for Large-Scale Relational Data	274
<i>Ruojing Hao (Research Institute, China United Network Communications Corporation, China), Chen Cheng (Research Institute, China United Network Communications Corporation, China), Lexi Xu (Research Institute, China United Network Communications Corporation, China), Yanan Zhang (Research Institute, China United Network Communications Corporation, China), Qingqing Zhang (Research Institute, China United Network Communications Corporation, China), Zijing Yang (Research Institute, China United Network Communications Corporation, China), Jie Gao (Research Institute, China United Network Communications Corporation, China), and Xinzhou Cheng (Research Institute, China United Network Communications Corporation, China)</i>	

Session BDRA_02: Big Data Applications

Big Data Based 5G 5G-A Network Heavy Load Optimization Scheme	280
<i>Xieomeng Zhu (Research Institute, China Unicom Network Communications Corporation, China), Yi Li (Research Institute, China Unicom Network Communications Corporation, China), Yuting Zheng (Research Institute, China Unicom Network Communications Corporation, China), Yuchao Jin (Research Institute, China Unicom Network Communications Corporation, China), Deyi Li (Research Institute, China Unicom Network Communications Corporation, China), Rui Xia (Research Institute, China Unicom Network Communications Corporation, China), Zixiang Di (Research Institute, China Unicom Network Communications Corporation, China), Lexi Xu (Research Institute, China Unicom Network Communications Corporation, China), Xinzhou Cheng (Research Institute, China Unicom Network Communications Corporation, China), and Yifan Wu (Joyware Electronics Corporation, China)</i>	
Innovative Architecture and Key Technology of Database for Multiple Scenarios	286
<i>Chunyu Jiang (Cloud Computing and Big Data Research Institute, China Academy of Information and Communication Technology, China), Siyuan Liu (Cloud Computing and Big Data Research Institute, China Academy of Information and Communication Technology, China), and Pengwei Ma (Cloud Computing and Big Data Research Institute, China Academy of Information and Communication Technology, China)</i>	
Overview of Data Intelligence: Technology Architecture and Application	292
<i>Chunyu Jiang (Cloud Computing and Big Data Research Institute, China Academy of Information and Communication Technology, China), Zhuo Wang (Cloud Computing and Big Data Research Institute, China Academy of Information and Communication Technology, China), and Jiafeng Tian (Cloud Computing and Big Data Research Institute, China Academy of Information and Communication Technology, China)</i>	
User Experience Perception-Oriented Network Optimization Method Based on Reinforcement Learning	298
<i>Zhen Xing (China Unicom Research Institute, China), Kun Chao (China Unicom Research Institute, China), Lexi Xu (China Unicom Research Institute, China), Lijuan Cao (China Unicom Research Institute, China), Yuwei Jia (China Unicom Research Institute, China), Jihua Li (China United Network Communications Co., Ltd. Beijing Branch, China), Jinchao Huang (China Unicom Research Institute, China), Chen Cheng (China Unicom Research Institute, China), Runsha Dong (China Unicom Research Institute, China), and Xinzhou Cheng (China Unicom Research Institute, China)</i>	
Attentive Siamese LSTM for Low-Resource Text Abnormal Detection of Transportation Documents	304
<i>Hongrun Gang (China Academy of Transportation Sciences, China), Liang Zhao (China Academy of Transportation Sciences, China), Yanhang Shen (China Academy of Transportation Sciences, China), Jianchao Yan (China Academy of Transportation Sciences, China), Wei Li (China Academy of Transportation Sciences, China), and Mengyang Guo (China Academy of Transportation Sciences, China)</i>	

Optimizing Energy-Distortion Trade-Off for BCI-Enabled Metaverse	310
<i>Yaqi Wang (Beijing University of Posts and Telecommunications, China), Yanlin Li (Beijing University of Posts and Telecommunications, China), Shengshi Yao (Beijing University of Posts and Telecommunications, China), Xiaoqi Qin (Beijing University of Posts and Telecommunications, China), and Jincheng Dai (Beijing University of Posts and Telecommunications, China)</i>	
One-Step MAML Algorithm with AdaBelief Optimization of Stroke Incidence Prediction	316
<i>Xi Guo (Guizhou Meteorological Data Center, China), Fouxu Zhao (Guizhou Center for Disease Control and Prevention, China), Guoqiang Liu (Guizhou Meteorological Data Center, China), Juan Wang (Guizhou Meteorological Data Center, China), Shichao Mu (Guizhou Meteorological Data Center, China), Hua Wang (Guizhou Meteorological Data Center, China), Biao Wang (Guizhou Meteorological Data Center, China), Yajing Zhi (Guizhou Meteorological Data Center, China), and Tienan Bai (Guizhou Meteorological Data Center, China)</i>	
Comprehensive Analysis of Full-Process Carbon Emission Evaluation in the Telecommunication Industry	322
<i>Yichen Xie (Unicom Vsens Communications Company, China), Bowei Pei (Unicom Vsens Communications Company, China), Dongliang Ma (Key Laboratory of Geographic Information Science, Ministry of Education, School of Geographic Sciences, East China Normal University, China), Lixin Li (Unicom Vsens Communications Company, China), Yukun Liu (Unicom Vsens Communications Company Anhui Branch, China), Lu Bai (Ordos Power Supply Branch, Inner Mongolia Electric Power (Group) Company, China), Bingming Wang (Unicom Vsens Communications Company, China), and Jiangtian Xie (Unicom Vsens Communications Company, China)</i>	

The 6th International Workshop on AI-driven Network 2024 (AINet2024)

Session AINet_01: AI-driven network optimization

Object Detection and Localization Optimization Algorithm Based on Attention Mechanism and Variational Convolution	328
<i>Haina Ye (China Unicom Smart City Research Institute, China), Xiaobo Wang (China Unicom Smart City Research Institute, China), Shan Yang (China Unicom Smart City Research Institute, China), Qiyuan Zhang (China Unicom Smart City Research Institute, China), Ti Wang (China Unicom Smart City Research Institute, China), and Zhongyan Du (China Unicom Smart City Research Institute, China)</i>	
Antenna Weights Optimization Based on Filtered Variation Quantum Computing	334
<i>Bao Guo (China Mobile Communication Group Design Institute Co., Ltd, China), Jingge Guo (University of Oxford), Yingtao Meng (China Mobile Communication Group Design Institute Co., Ltd, China), Yang Zhang (China Mobile Communication Group Co., Ltd, China), Yu Qiu (China Mobile Communication Group Design Institute Co., Ltd, China), Longgang Han (China Mobile Communication Group Design Institute Co., Ltd, China), and Ruowei Yin (China Mobile Communication Group Design Institute Co., Ltd, China)</i>	

Coverage Solution for Airspace Routes in Low Altitude Network	340
<i>Bao Guo (China Mobile Communication Group Design Institute Co., Ltd, China), Jinge Guo (University of Oxford), Jiayu Li (China Mobile Communication Group Design Institute Co., Ltd, China), Jinhu Shen (China Mobile Communication Group Design Institute Co., Ltd, China), Xiaoxuan Du (China Mobile Communication Group Design Institute Co., Ltd, China), and Yang Zhang (China Mobile Communication Group Co., Ltd, China)</i>	
Beam Operation Mode Switching Strategy for LEO Satellite Communication Systems	346
<i>Qingye Zhang (The 54th Research Institute of CETC, China), Linan Wang (The 54th Research Institute of CETC, China), Wei Zhou (The 54th Research Institute of CETC, China), Xiangyu Lu (The 54th Research Institute of CETC, China), Liquan Wang (The 54th Research Institute of CETC, China), Liming Liang (Beijing University of Posts and Telecommunications, China), and Jinmei Liu (Beijing University of Posts and Telecommunications, China)</i>	
FCLIT: Block-Wise Federated Continual Learning for Computing Power Measurement Under Dynamic Tasks	352
<i>Hui Jiang (China United Network Communications Group Corporation Limited, China; Beijing University of Posts and Telecommunications, China), Xiangbin Kong (China United Network Communications Corporation Limited Guangdong Branch, China), Min Lin (China United Network Communications Corporation Limited Guangdong Branch, China), Xiaodong Zhang (China United Network Communications Corporation Limited Guangdong Branch, China), Kunyan Li (China United Network Communications Group Corporation Limited, China; Beijing University of Posts and Telecommunications, China), and Jie Yang (Beijing University of Posts and Telecommunications, China)</i>	
A New Deep Joint Source Channel Coding with GAN Discriminator for Wireless Image Transmission	358
<i>Yan Xu (Inspur Communication Information System Co., Ltd., China), Linjiang Shen (Inspur Communication Information System Co., Ltd., China), Shuqing Qiu (Inspur Communication Information System Co., Ltd., China), Chao Cui (Inspur Communication Information System Co., Ltd., China), and Jundong Xu (Inspur Communication Information System Co., Ltd., China)</i>	

Autonomous Networks Based Network Intelligence Assessment and Upgrade	366
<i>Zhifei Liu (Research Institute, China United Network Communications Group Corporation, China), Jianjian Yang (Research Institute, China United Network Communications Group Corporation, China), Zhanchun Zhao (Research Institute, China United Network Communications Group Corporation, China), Yongjian Zhao (Research Institute, China United Network Communications Group Corporation, China), Qianren Liu (Construction and Development Departmentt, China United Network Communications Group Corporation, China), Ding Zhang (Research Institute, China United Network Communications Group Corporation, China), Lexi Xu (Research Institute, China United Network Communications Group Corporation, China), Keji Zhou (Research Institute, China United Network Communications Group Corporation, China), Yalong Wu (Research Institute, China United Network Communications Group Corporation, China), Shanshan Li (Research Institute, China United Network Communications Group Corporation, China), Fengjun Wang (Research Institute, China United Network Communications Group Corporation, China), and Lu Zhi (Research Institute, China United Network Communications Group Corporation, China)</i>	
Verify-Agent: Large Language Model Multi-Agent for Intelligent Verification	374
<i>Weiyen Chu (Research Institute, China United Network Communications Corporation, China), Sitan Yin (Beijing University of Posts and Telecommunications, China), Lei Huang (Research Institute, China United Network Communications Corporation, China), Ling Lin (Research Institute, China United Network Communications Corporation, China), Xiaodong Wang (Research Institute, China United Network Communications Corporation, China), Zhi Zhang (Research Institute, China United Network Communications Corporation, China), and Hongwu Li (Research Institute, China United Network Communications Corporation, China)</i>	

Session AINet_02: AI-driven network management

Scene Clustering Based Optimization Method for Parameters of Wireless Cellular Network	380
<i>Jinhu Shen (China Mobile Group Design Institute Co., Ltd., China), Shuaizhi Fu (China Mobile Group Design Institute Co., Ltd., China), Jiayu Li (China Mobile Group Design Institute Co., Ltd., China), Ao Shen (China Mobile Group Design Institute Co., Ltd., China), Jiandi Luo (China Mobile Communications Group Co., Ltd, China), Pengcheng Liu (China Mobile Group Design Institute Co., Ltd., China), Wenjing Duan (China Mobile Communications Group Shaanxi Co., Ltd., China), Ruopei Guo (China Mobile Group Design Institute Co., Ltd., China), Yilin Tan (China Mobile Group Design Institute Co., Ltd., China), Yang Zhang (China Mobile Group Design Institute Co., Ltd., China), Mingjie Yang (China Mobile Group Design Institute Co., Ltd., China), and Qintian Wang (China Mobile Group Design Institute Co., Ltd., China)</i>	

Intelligent Airspace Management 5G-A Enabled Adaptive Generation of Low-Altitude Virtual Corridors	386
<i>Enwan Zhang (China Mobile Group Anhui Company Limited (China Mobile Group Anhui Co., Ltd.), China), Ping Chen (Hefei No.48 Middle School Binhu Campus, China), Jianxun Ding (School of Automotive and Transportation Engineering, Hefei University of Technology, China), Xingbin Zhan (School of Automotive and Transportation Engineering, Hefei University of Technology, China), Benwen Zhou (China Mobile Group Anhui Company Limited (China Mobile Group Anhui Co., Ltd.), China), Guangshan Wang (China Mobile Group Anhui Company Limited (China Mobile Group Anhui Co., Ltd.), China), Kai Shen (China Mobile Group Anhui Company Limited (China Mobile Group Anhui Co., Ltd.), China), Chaolun Wang (Research Institute, China Academy of Information and Communications Technology, China), Xiaofa Zhang (Anhui Road Transport Management and Service Center, China), and Xuan Cui (AsiaInfo Technologies Limited, DNC Project Anhui Dept, China)</i>	
A Secure and Trustworthy Cross-Domain Data Aggregation Platform	392
<i>Kunyan Li (China United Network Communications Group Corporation Limited, China), Xiaojun Mu (China United Network Communications Group Corporation Limited, China), Xiongwei Jia (China United Network Communications Group Corporation Limited, China), Jinwu Wei (China United Network Communications Group Corporation Limited, China), Rongfang Zhang (China United Network Communications Group Corporation Limited, China), and Ruitao Ma (China United Network Communications Group Corporation Limited, China)</i>	
A Novel SDN/NFV-Based Network Slicing Framework for 6G Networks: Design, Automation, and Resource Management	398
<i>Yi Yue (China Unicom Research Institute, China), Xuebei Zhang (China Unicom Research Institute, China), Xufei Dong (China Unicom Research Institute, China), Xihuizi Meng (China Unicom Research Institute, China), Chang Cao (China Unicom Research Institute, China), and Xiongyan Tang (China Unicom Research Institute, China)</i>	
Intelligent Recommendation of Mobile Network Planning Areas Based on Multi-Dimensional Heterogeneous Data and AI Algorithm	406
<i>Yunxiao Wu (Intelligent Network Innovation Center, China United Network Communications Corporation, China), Bin Chen (Intelligent Network Innovation Center, China United Network Communications Corporation, China), Qing Zhang (Intelligent Network Innovation Center, China United Network Communications Corporation, China), Yu Zhao (Intelligent Network Innovation Center, China United Network Communications Corporation, China), and Shiwen Quan (Intelligent Network Innovation Center, China United Network Communications Corporation, China)</i>	

Enhancement Strategies for Digital Humans and Timbre Technology in AI-Generated Video	412
<i>Yuhan Liu (China United Network Communications Corporation Research Institute, China), Qianren Liu (China United Network Communications Corporation, China), Fengjun Wang (China United Network Communications Corporation Research Institute, China), Jianjian Yang (China United Network Communications Corporation Research Institute, China), Xiaoyu Zhu (China United Network Communications Corporation Research Institute, China), Shiqi Wen (China United Network Communications Corporation Research Institute, China), and Yu Peng (China United Network Communications Corporation Research Institute, China)</i>	
A Practice on Open RAN Intelligent Platform for Efficient Load Balancing	418
<i>Huanhuan Liu (China Unicom Research Institute, China), Yue Wu (China Unicom Research Institute, China), Rong Huang (China Unicom Research Institute, China), Jiming Gao (Inter China Company, China), Xiongyan Tang (China Unicom Research Institute, China), and Shan Liu (China Unicom Research Institute, China)</i>	
An AI-Based Optimization Method for Atmospheric Waveguide Interference	424
<i>Tian Xiao (China Unicom Research Institute, China), Guoping Xu (China United Network Communications Group Co.Ltd, China), Bei Li (China Unicom Research Institute, China), Zixiang Di (China Unicom Research Institute, China), Lexi Xu (China Unicom Research Institute, China), Jiajia Zhu (China Unicom Research Institute, China), Feibi Lyu (China Unicom Research Institute, China), Chen Cheng (China Unicom Research Institute, China), and Xinzhou Cheng (China Unicom Research Institute, China)</i>	

The 2nd International Workshop on Advanced Technology for Space-Air-Ground Integrated Information Networks 2024 (SAGIINAT 2024)

Novel Power Usage Effectiveness Navigated Computing Task Assignment With Micro Data Center Empowered By ITU-T L.1307	430
<i>Shoufeng Wang (AsiaInfo technologies (China) INC., China), Ye Ouyang (AsiaInfo technologies (China) INC., China), Fan Li (China Unicom Beijing Branch, China), Jianchao Guo (AsiaInfo technologies (China) INC., China), Xuan Chen (the Intelligent Network Innovation Center of China Unicom, China), Lexi Xu (China Unicom Research Institute, China), Zhanwu Li (AsiaInfo technologies (China) INC., China), Lianhua Zhang (AsiaInfo technologies (China) INC., China), and Limeng Ma (AsiaInfo technologies (China) INC., China)</i>	

Deep Reinforcement Learning-Based Routing Optimization for Software-Defined Satellite Networks	436
<p><i>Guoyi Zhang (Institute of Space System Engineering, CASIC, China; CASIC Space Engineering Development Co., Ltd., China), Kai Wang (Earth Observation System & Data Center, China National Space Administration, China), Changqing Lai (The Information Center of State Administration of Science, Technology and Industry for National Defence.PRC, China), Chong Wang (Institute of Space System Engineering, CASIC, China; CASIC Space Engineering Development Co., Ltd., China), Hongyan Xu (Earth Observation System & Data Center, China National Space Administration, China), Hao Qi (Earth Observation System & Data Center, China National Space Administration, China), Xiaoyang Liang (Earth Observation System & Data Center, China National Space Administration, China), Yun Bai (The Information Center of State Administration of Science, Technology and Industry for National Defence.PRC, China), and Yinlong Liu (Institute of Information Engineering, Chinese Academy of Sciences, China)</i></p>	
Satellite Network Random Access Based on Multi-Agent Q-Learning	442
<p><i>Guoyi Zhang (Institute of Space System Engineering, CASIC, China; CASIC Space Engineering Development Co., Ltd., China), Hongyan Xu (Earth Observation System & Data Center, China National Space Administration, China), Changqing Lai (The Information Center of State Administration of Science, Technology and Industry for National Defence.PRC, China), Kai Wang (Earth Observation System & Data Center, China National Space Administration, China), Xingxing Wang (Earth Observation System & Data Center, China National Space Administration, China), Yun Bai (The Information Center of State Administration of Science, Technology and Industry for National Defence.PRC, China), Chong Wang (Institute of Space System Engineering, CASIC, China; CASIC Space Engineering Development Co., Ltd., China), Hao Qi (Earth Observation System & Data Center, China National Space Administration, China), and Yinlong Liu (Institute of Information Engineering, Chinese Academy of Sciences, China)</i></p>	
AT-Simulator: An Aviation Traffic Simulation Framework for LEO Communication Networks	448
<p><i>Yu Liang (Shanghai Satellite Network Research Institute Co., Ltd., Shanghai Key Laboratory of Satellite Network, China), Qunying Sun (Shanghai Satellite Network Research Institute Co., Ltd., Shanghai Key Laboratory of Satellite Network, China), Yajing Zhang (Shanghai Satellite Network Research Institute Co., Ltd., Shanghai Key Laboratory of Satellite Network, China), Jiayu Zhou (Shanghai Satellite Network Research Institute Co., Ltd., Shanghai Key Laboratory of Satellite Network, China), Mingji Dong (Shanghai Satellite Network Research Institute Co., Ltd., Shanghai Key Laboratory of Satellite Network, China), Zhanwei Wang (Space Star Technology Co., Ltd., China), Yueyue Zhang (Shanghai Satellite Network Research Institute Co., Ltd., Shanghai Key Laboratory of Satellite Network, China), and Ping Du (Shanghai Satellite Network Research Institute Co., Ltd., Shanghai Key Laboratory of Satellite Network, China)</i></p>	

Achieving Resource Representation Freshness in Integrated Satellite-Terrestrial Networks	454
<i>Lin Lin (China Unicom Research Institute, China), Bin Zhu (China Unicom Research Institute, China), Zelin Wang (China Unicom Research Institute, China), Guangquan Wang (China Unicom Research Institute, China), Xiongyan Tang (China Unicom Research Institute, China), Kaichu Xing (China Unicom Research Institute, China), and Lexi Xu (China Unicom Research Institute, China)</i>	
A Novel Traffic Mapping Algorithm Based on Service Distribution and Dynamic Satellite-Terrestrial Topology	460
<i>Jiayu Zhou (Shanghai Satellite Network Research Institute Co., Ltd; Shanghai Key Laboratory of Satellite Network, China), Qunying Sun (Shanghai Satellite Network Research Institute Co., Ltd.; Shanghai Key Laboratory of Satellite Network, China), Huan Chen (Shanghai Satellite Network Research Institute Co., Ltd.; Shanghai Key Laboratory of Satellite Network, China), Xinyue Cao (Shanghai Satellite Network Research Institute Co., Ltd.; Shanghai Key Laboratory of Satellite Network, China), Mingji Dong (Shanghai Satellite Network Research Institute Co., Ltd.; Shanghai Key Laboratory of Satellite Network, China), Zhanwei Wang (Space Star Technology Co., Ltd., China), Yueyue Zhang (Shanghai Satellite Network Research Institute Co., Ltd.; Shanghai Key Laboratory of Satellite Network, China), and Ping Du (Shanghai Satellite Network Research Institute Co., Ltd.; Shanghai Key Laboratory of Satellite Network, China)</i>	
A Cross-Layer Congestion Control Method Leveraging Radio Access Network Information	466
<i>Xingyu Fan (Defence Industry Secrecy Examination and Certification Center, China), Yufan Du (Beijing Institute of Technology, China), Huanyu Sun (Beijing Institute of Technology, China), Peng Yin (Defence Industry Secrecy Examination and Certification Center, China), Jihua Lu (Beijing Institute of Technology, China), and Lihui Feng (Beijing Institute of Technology, China)</i>	
Contrastive Learning Based Visual Place Recognition pre-Training Framework for UAV Geo-Localization	473
<i>Yifan Liu (Beijing University of Posts and Telecommunications, China), Haoran Wang (Beijing University of Posts and Telecommunications, China), Xinpeng Han (Beijing University of Posts and Telecommunications, China), Haoliang Yuan (Hangzhou WITLANCE Technology Co., Ltd, China), Pengyu Yin (Airborne Remote Sensing Center, Aerospace Information Research Institute, Chinese Academy of Sciences, China), and Kun Cheng (Beijing University of Posts and Telecommunications, China)</i>	

The 6th International Workshop on Machine Learning assisted Smart System (MLSys2024)

Session MLSys_01: Machine learning assisted smart applications

Analysis of the Current State of Software Security Research and Preliminary Exploration of Future Trends	481
<i>Fengjun Wang (China United Network Communications Corp Research Institute, China), Qianren Liu (China United Network Communications Corporation, China), Yuhao Liu (China United Network Communications Corp Research Institute, China), Xiaoyu Zhu (China United Network Communications Corp Research Institute, China), and Shiqi Wen (China United Network Communications Corp Research Institute, China)</i>	
Network Quality of Video Services Based on IoT and Computing Power	487
<i>Bei Li (Research Institute, China United Network Communication Corporation, China), Qiuyan Liu (Research Institute, China United Network Communication Corporation, China), Tian Xiao (Research Institute, China United Network Communication Corporation, China), Hongbing Ma (China Unicom Network Communications Group Co., Ltd., China), Zixiang Di (Research Institute, China United Network Communication Corporation, China), Wei Zhang (Research Institute, China United Network Communication Corporation, China), Tao Xiao (Guangdong Branch of China Unicom, China), Xueqin Jia (Research Institute, China United Network Communication Corporation, China), Lexi Xu (Research Institute, China United Network Communication Corporation, China), Jiajia Zhu (Research Institute, China United Network Communication Corporation, China), and Xiaomeng Zhu (Research Institute, China United Network Communication Corporation, China)</i>	
Two-Stage Attention Based Collaborative Inference in Semantic Communication	493
<i>Bowen Zhao (Southwest Jiaotong University, China), Tengxiang Yang (Lanzhou University of Technology, China), Huanlai Xing (Southwest Jiaotong University, China), and Lexi Xu (China United Network Communications Corporation, China)</i>	
Lakehouse Data Platform Technology Overview	499
<i>Yanmei Liu (China Academy of Information and Communications Technology, China), Jiafeng Tian (China Academy of Information and Communications Technology, China), Shilian Yu (China Academy of Information and Communications Technology, China), Xiaolu Han (China Academy of Information and Communications Technology, China), and Xuan Jia (China Academy of Information and Communications Technology, China)</i>	
Learning to Transfer Automatic Data Augmentation Policies Using Reinforcement Learning	505
<i>Bin Yang (China Unicom Research Institute, China), Ying Xing (School of Artificial Intelligence, Beijing University of Posts and Telecommunications, China), Jinchao Huang (China Unicom Research Institute, China), Yue Wang (China Unicom Research Institute, China), Yuehan Chen (School of Computer Science, Beijing University of Posts and Telecommunications, China), Zhipu Xie (China Unicom Research Institute, China), Lexi Xu (China Unicom Research Institute, China), and Han Zhang (China Unicom Research Institute, China)</i>	

TSOKG: A Methodology for Constructing a Telecommunications Service Operation Knowledge Graph	512
<i>Wan Wei (China Telecom Co., Ltd. Hubei Branch, China), Jiajun Cheng (China Telecom Co., Ltd. Hubei Branch, China), Wei Cheng (China Telecom Co., Ltd. Hubei Branch, China), Lin Wang (China Telecom Co., Ltd. Hubei Branch, China), Gangyan Tan (China Telecom Co., Ltd. Hubei Branch, China), and Chao Nie (China Telecom Co., Ltd. Hubei Branch, China)</i>	
DEMTC: A Distributed Edge Computing Approach for Multi-Intersection Traffic Control	518
<i>Enwan Zhang (China Mobile Group Anhui Company Limited (China Mobile Group Anhui Co., Ltd.), China), Ping Chen (Hefei No.48 Middle School Binhu Campus, China), Jianxun Ding (School of Automotive and Transportation Engineering, Hefei University of Technology, China), Xingbin Zhan (School of Automotive and Transportation Engineering, Hefei University of Technology, China), Helin Yan (China Mobile Group Anhui Company Limited (China Mobile Group Anhui Co., Ltd.), China), Nannan Lu (China Mobile Group Anhui Company Limited (China Mobile Group Anhui Co., Ltd.), China), Sida Huang (China Mobile Group Anhui Company Limited (China Mobile Group Anhui Co., Ltd.), China), Chaolun Wang (Research Institute, China Academy of Information and Communications Technology, China), Xianyue Guo (Beijing Technology and Business University, China), and Zhong Lin (AsiaInfo Technologies Limited, DNC Central China Regional Project Department, China)</i>	
Human-Centric Road Network Evaluation A Multi-Dimensional Trajectory Big Data Approach	524
<i>Enwan Zhang (China Mobile Group Anhui Company Limited (China Mobile Group Anhui Co., Ltd.), China), Ping Chen (Hefei No.48 Middle School Binhu Campus, China), Xiaofa Zhang (Anhui Road Transport Management and Service Center, China), Jianxun Ding (School of Automotive and Transportation Engineering, Hefei University of Technology, China), Xingbin Zhan (School of Automotive and Transportation Engineering, Hefei University of Technology, China), Qiaoqiao Wei (China Mobile Group Anhui Company Limited (China Mobile Group Anhui Co., Ltd.), China), Yuting Zhang (China Mobile Group Anhui Company Limited (China Mobile Group Anhui Co., Ltd.), China), Bo Su (China Mobile Group Anhui Company Limited (China Mobile Group Anhui Co., Ltd.), China), Chaolun Wang (China Academy of Information and Communications Technology, China), and Zhenlong Xu (AsiaInfo Technologies Limited, DNC Central Region, China)</i>	

Research and Application of Real-Time Lake Warehouse Integrated Technology in Intelligent Customer Service Scenarios	530
<i>Jie Gao (Research Institute, China United Network Communications Corporation), Xingwei Zhang (China United Network Communications Corporation Ningxia Branch), Zhiyong Long (China United Network Communications Corporation Ningxia Branch), Chuntao Song (Research Institute, China United Network Communications Corporation), Xinzhou Cheng (Research Institute, China United Network Communications Corporation), Lexi Xu (Research Institute, China United Network Communications Corporation), Tianyi Wang (Research Institute, China United Network Communications Corporation), Ruojing Hao (Research Institute, China United Network Communications Corporation), Yue Wang (Research Institute, China United Network Communications Corporation), and Feibi Lv (Research Institute, China United Network Communications Corporation)</i>	

Session MLSys_02: Machine learning assisted smart platforms

An Interconnection Technology Framework of Privacy Computing Heterogeneous Platforms for Telecommunications Operators	536
<i>Rongfang Zhang (China Unicom Research Institute, China), Rui Xia (China Unicom Research Institute, China), Yinghui Liu (Beijing Jiaotong University, China; Unicom Research Institute, China), Tong Wu (China National Building Material Group Financial Co., Ltd., China), Tao Wu (China Unicom Research Institute, China), Jiao Zhu (China Unicom Research Institute, China), Xiaojun Mu (China Unicom Research Institute, China), Yue Wang (China Unicom Research Institute, China), and Kunyan Li (China Unicom Group Corporation, China)</i>	
ScCEE-IDS: A Federated Learning-Based Intrusion Detection System for Smart Cities with Cloud-Edge-End Integration	542
<i>Hongtao Liu (Shenzhen secrecy tech serv cen, China)</i>	
Trustworthy Matchmaking for Intelligent Computing Services	548
<i>Xiaojun Mu (China Unicom Research Institute, China), Yulun Song (Data Intelligence Department Unicom Digital Tech., China), Kunyan Li (China United Network Communications Group Corporation Limited, China), Xiongwei Jia (China Unicom Research Institute, China), Rongfang Zhang (China Unicom Research Institute, China), Yunlong Xie (Data Intelligence Department Unicom Digital Tech., China), Xiaoyun Jia (Data Intelligence Department Unicom Digital Tech., China), and Lin Sun (Data Intelligence Department Unicom Digital Tech., China)</i>	

5G/5G-A Meets Private Network: Standardization, Technology, Indicator, Optimization Platform	554
<i>Lexi Xu (Research Institute, China United Network Communications Corporation, China), Xiongyan Tang (Research Institute, China United Network Communications Corporation, China), Hongwu Li (Research Institute, China United Network Communications Corporation, China), Xinzhou Cheng (Research Institute, China United Network Communications Corporation, China), Kun Chao (Research Institute, China United Network Communications Corporation, China), Zhen Xing (Research Institute, China United Network Communications Corporation, China), Heng Zhang (Research Institute, China United Network Communications Corporation, China), Zixiang Di (Research Institute, China United Network Communications Corporation, China), Bei Li (Research Institute, China United Network Communications Corporation, China), Tian Xiao (Research Institute, China United Network Communications Corporation, China), Jie Gao (Research Institute, China United Network Communications Corporation, China), and Xiaomeng Zhu (Research Institute, China United Network Communications Corporation, China)</i>	
Telecom Marketing Recommendation Script Generation Based on LLM Structure	561
<i>Yue Wang (China Unicom Research Institute, China), Yi Yang (China United Network Communications Limited Shandong Branch, China), Yun Zhao (China United Network Communications Limited Shandong Rizhao Branch, China), Leixi Xu (China Unicom Research Institute, China), Qi Zhang (China United Network Communications Limited Shandong Branch, China), Xin Wang (China Unicom Research Institute, China), Jinchao Huang (China Unicom Research Institute, China), Kunyan Li (China United Network Communications Group Corporation Limited, China), and Yongqing Yuan (West China Hospital, Sichuan University, China)</i>	
A Medical Consultation System Based on Federated Learning Framework	567
<i>Yue Wang (China Unicom Research Institute, China), Yi Yang (China United Network Communications Limited Shandong Branch, China), Chenshu Hu (China Automotive Data Co., Ltd., China), Lexi Xu (China Unicom Research Institute, China), Jie Li (China Unicom Research Institute, China), Lin Sun (China Unicom Digital Technology Co., Ltd., China), Wenjing Xu (China Unicom Digital Technology Co., Ltd., China), Huiying Zhao (China Unicom Online Information Technology Co., Ltd., China), and Jie Gao (China Unicom Research Institute, China)</i>	
Architectural Framework and Standardization of LLM-Enhanced Intelligent Data Analysis Systems	573
<i>Xiaolu Han (China Academy of Information and Communications Technology, China), Jianrui Ma (China Academy of Information and Communications Technology, China), Shilian Yu (China Academy of Information and Communications Technology, China), Yanmei Liu (China Academy of Information and Communications Technology, China), Pengwei Ma (China Academy of Information and Communications Technology, China), and Chaolun Wang (China Academy of Information and Communications Technology, China)</i>	

Technological Impact on Private Domain Marketing Systems	579
<i>Jianrui Ma (China Academy of Information and Communications Technology, China), Xiaolu Han (China Academy of Information and Communications Technology, China), Chaolun Wang (China Academy of Information and Communications Technology, China), and Shilian Yu (China Academy of Information and Communications Technology, China)</i>	
The Application and Technical Standards of Data Middle Platform	585
<i>Shilian Yu (China Academy of Information and Communications Technology, China), Zhuo Wang (China Academy of Information and Communications Technology, China), Yanmei Liu (China Academy of Information and Communications Technology, China), Xiaolu Han (China Academy of Information and Communications Technology, China), Jianrui Ma (China Academy of Information and Communications Technology, China), Jiafeng Tian (China Academy of Information and Communications Technology, China), Yuan Liu (China Academy of Information and Communications Technology, China), and Xuan Jia (China Academy of Information and Communications Technology, China)</i>	
Best-Worst Method Based Smart Cities Sustainable Development Paths	591
<i>Fuyun Chu (University of Chinese Academy of Sciences, China), Weijia Wu (Hejun Consulting Company, China), Bo Yuan (China Academy of Information and Communications Technology, China), Xuan Jia (China Academy of Information and Communications Technology, China), Yanmei Liu (China Academy of Information and Communications Technology, China), Jiayu Li (China North Standardization Center, China), Chen Kang (China Academy of Information and Communications Technology, China), and Shilian Yu (China Academy of Information and Communications Technology, China)</i>	

The 2nd International Workshop on Machine Vision and Intelligent Control (MVIC-2024)

Session MVIC_01: Computer vision

A Study on Recognizing Industrial Barcodes in Low-Light High-Speed Conditions Using Deep Learning and Image Enhancement Techniques	599
<i>Junhao Cheng (Software Engineering Institute of Guangzhou, China) and Zhixian Deng (Software Engineering Institute of Guangzhou, China)</i>	
Innovative Strategies for Human-Object Interaction in a Virtual Studio	605
<i>Qijian Ou (Wuzhou Medical College, China), HaiXiao Gong (Wuzhou University, China), Guijing Wu (Wuzhou Medical College, China), Lining Pan (Wuzhou Medical College, China), and Ning Qin (Wuzhou Medical College, China)</i>	

Unity3D-Based Flame Effect Plugin Design and Implementation	611
<i>Xiongjie Tao (Faculty of Humanities and Arts, Macau University of Science and Technology, China), Minglang Chen (Guangxi Key Laboratory of Machine Vision and Intelligent Control, Wuzhou University, China), Zhipeng Cai (Faculty of Humanities and Arts, Macau University of Science and Technology, China), Yingli Zhao (Guangxi Key Laboratory of Machine Vision and Intelligent Control, Wuzhou University, China), Jing Zhang (Guangxi Key Laboratory of Machine Vision and Intelligent Control, Wuzhou University, China), and Yingshan Meng (Guangxi Key Laboratory of Machine Vision and Intelligent Control, Wuzhou University, China)</i>	
Video-Based Human Gesture-Action Mapping	617
<i>Xiongjie Tao (Faculty of Humanities and Arts, Macau University of Science and Technology, China), Hui Guo (Faculty of Humanities and Arts, Macau University of Science and Technology, China; Guangxi Key Laboratory of Machine Vision and Intelligent Control, Wuzhou University, China), Bin Hu (Faculty of Humanities and Arts, Macau University of Science and Technology, China), Yingli Zhao (Guangxi Key Laboratory of Machine Vision and Intelligent Control, Wuzhou University, China), and Tianyuan Zhang (Guangxi Key Laboratory of Machine Vision and Intelligent Control, Wuzhou University, China)</i>	
Optimization Method For Fractal Image Compression Based on the Maximum Inter-Class Variance Method	623
<i>Di Xie (Guangxi Key Laboratory of Machine Vision and Intelligent Control, China), Caichun Cen (Macao University of Science and Technology, China), Yingli Zhao (Guangxi Key Laboratory of Machine Vision and Intelligent Control, China), Jie He (Guangxi Key Laboratory of Machine Vision and Intelligent Control, China), Hongyan Lu (Wuzhou Medical College, China), Minglang Chen (Guangxi Key Laboratory of Machine Vision and Intelligent Control, China), and Yuan Jiang (Guangxi Key Laboratory of Machine Vision and Intelligent Control, China)</i>	
Realistic Snow Simulation Framework: Integration of Multi-Factor Precise Calculation and UE Optimization	629
<i>Hongyan Lu (Faculty of Public Education, China), HaiXiao Gong (Wuzhou University, China), Wanxin Liang (Faculty of Public Education, China), Caichun Cen (Wuzhou University, China; Macau University of Science and Technology, China), and Yingli Zhao (Wuzhou University, China)</i>	
A Three-Dimensional Virtual Sand Table Framework Suitable for Industrial Parks	636
<i>Wanxin Liang (Faculty of Public Education, Wuzhou Medical College, China), Hongyan Lu (Faculty of Public Education, Wuzhou Medical College, China), Hui Guo (Macao University of Science and Technology, China; Wuzhou University, China), Mei Tang (College of Electronic and information engineering, Wuzhou Vocational College, China), Di Xie (Wuzhou University, China), and Yiling He (Wuzhou University, China)</i>	
Ship License Plate Detection and Recognition Algorithm Based on YOLOv8 and Improved CRNN	641
<i>Hongquan Lin (Wuzhou University, China), Weize Liao (Wuzhou University, China), Jinming Mo (Guangxi Xijiang Development & Investment Group Co., China), Changyu Ye (Wuzhou University, China), and Xiaoyu Ji (Wuzhou University, China)</i>	

An Improved YOLOv8 Four-Season Honey Longan Recognition and Location Method	647
<i>Xinru Chen (Wuzhou University, China), Yigui Kong (Wuzhou University, China), and Qinghu Zeng (Wuzhou University, China)</i>	

Session MVIC_02: Intelligent data and applications

Research on Intelligent Diagnosis and Treatment of Sleep Apnea Syndrome Driven by Health Big Data	652
<i>Junhao Cheng (Software Engineering Institute of Guangzhou, China) and Bin Hu (Faculty of Arts and Humanities Macau University of Science and Technology, China)</i>	
An Algorithm for Suppressing Boundary Cutting Ringing Based on Interpolation	658
<i>Jing Liang (WuZhou University, China)</i>	
A Dialogue System for Emotional Support Based on a Heterogeneous Neural Network	664
<i>Jianting Zhang (Heyuan Polytechnic, China) and Yongfu Zhou (Heyuan Polytechnic, China)</i>	
Swin-BCPN: A Fetal Ultrasound Four-Chamber Quality Assessment Model Based on Structure Detection	670
<i>Donglian Li (School of Information and Communication, Guilin University of Electronic Technology, China), Hui Guo (Guangxi Key Laboratory of Machine Vision and Intelligent Control, Wuzhou University, China), Shengyuan Zhou (School of Information and Communication, Guilin University of Electronic Technology, China), JunMing Wei (College of Electronical and Information Engineering, Wuzhou University, China), Xiaohong Zhong (School of Medicine, Women and Children's Hospital, Xiamen University, China), Shengli Li (Department of Ultrasound Shenzhen Maternal and Child Healthcare Hospital, China), and Yayan Chen (Shenzhen Longhua District Maternity & Child Healthcare Hospital, China)</i>	
A Tool Wear Monitoring Method Based on WOA-DBO-SVM for Small-Deep Hole Drilling	676
<i>Chang Qin (Wuzhou University, China), LinMing Lian (Wuzhou University, China), ShengJia An (Guilin University of Electronic Science and Technology, China), and Hongzhi Hu (Guilin University of Electronic Science and Technology, China)</i>	
Machine Learning-Based Novel Sedative Drug Clinical Trial Efficacy Analysis and Prediction System	682
<i>Xueyan Lu (Wuzhou University, China)</i>	
User Experience Design Methodology for Desktop Laser Cutting Machines	688
<i>Weiyang Liang (Shenzhen Ef Technology Co., Limited, China), Yingying Ma (Faculty of Humanities and Arts Macau University of Science and Technology, China), Song Lyu (Shenzhen Ef Technology Co., Limited, China), Junhao Cheng (Department of Software Engineering Software Engineering Institute of Guangzhou, China), and Huiting Li (Faculty of Humanities and Arts Macau University of Science and Technology, China)</i>	
Indoor Inspection Robot Positioning and Navigation Method Based on Improved Monte Carlo Localization Algorithm	694
<i>Haiying Li (Wuzhou University, China)</i>	

Design of Bandgap Reference Source with Composite Current Compensation Strategy	700
<i>Yongkang Shen (Guangxi University, China), Xing Zhong (Guangxi University, China), Jianhai Yu (Wuzhou University, China), Man Li (Wuzhou University, China), and Yifei Wang (Wuzhou University, China)</i>	
Author Index	705