The 19th IEEE International Conference on Mobility, Sensing and Networking (MSN 2023)

December 14-16, 2023 · Nanjing, China

Conference Program and Information Booklet

Technically Co-sponsored by

Advanced Program Summary (Beijing Time, UTC+8)

14 December 2023 (Thursday)			
08:30-09:00	Opening Ceremony		
09:00-09:45	Keynote 1-Prof. Qian Zhang		
09:45-10:30	Keynote 2-Prof. Kui Ren		
10:30-10:45	Coffee break		
10:45-11:30	Panel: Multi-modal Sensing in the Age of Big Models		
11:30-14:00	Lunch break		
14:00-15:45	MetaSCN/NMIC	AI2OT/SoftIoT	Young Scientists Forum
15:45-16:00	Coffee break		
16:00-17:30	**T1-1**: Sensing, Monitoring, and Tracking Systems	SoftIoT	Young Scientists Forum
15 December 2023 (Friday)			
08:30-10:00	**T1-2**: Crowd Sensing and Mobile Computing	**T2-1**: Federated Learning	**T3-1**: Watermarking and Fingerprinting
10:00-10:15	Coffee break		
10:15-11:45	**T1-3**: Networking Protocols and Optimization	**T2-2**: Edge Computing	**T3-2**: Defense
11:45-14:00	Lunch break		
14:00-15:30	**T1-4**: UAV and Satellite Network	**T2-3**: Task Offloading	**T3-3**: Anomaly Detection
15:30-15:45	Coffee break		
15:45-17:15	**T4-1**: Federated Learning	**T2-4**: IoT and Digital Twins	**T3-4**: Privacy
16 December 2023 (Saturday)			
08:30-10:00	**T4-2**: Big Data	**T6-1**: Advanced Applications	**T3-5**: Network Security
10:00-10:15	Coffee break		
10:15-11:45	**T4-3**: Deep Learning	**T6-2**: Smart City	**T5-1**: Systems, Tools and Testbed
End of Conference			

Keynote Speech 1

Human-Centric Contactless Sensing Design in the Age of AIoT

Prof. Qian Zhang
Hong Kong University of Science and Technology (HKUST)

Abstract

The integration of AI and IoT, especially the development of intelligent sensing technology, creates opportunities for human-centered applications and also brings related challenges. The heterogeneous characteristics of sensed data, the incompleteness of different end-user data, low-quality data caused by limited sensing device resources, as well as related issues such as the privacy of sensing data and the security of intelligent models have brought challenges to the design of intelligent sensing. At the same time, the diversity of sensing modalities and the advancement of contactless sensing have also brought new opportunities for breakthroughs in sensing capabilities and the convenience of sensing services. In this talk, I will focus on sharing cases of how we deal with the above challenges and take advantage of related opportunities in multiple human-centered application scenarios.

Biography

Dr. Zhang joined Hong Kong University of Science and Technology (HKUST) in Sept. 2005 where she is now Tencent Professor of Engineering and Chair Professor of the Department of Computer Science and Engineering. She is also serving as the co-director of Huawei-HKUST innovation lab and the director of digital life research center of HKUST. Before that, she was in Microsoft Research Asia, Beijing, from July 1999, where she was the research manager of the Wireless and Networking Group. Dr. Zhang has published more than 400 refereed papers in international leading journals and key conferences. She is the inventor of more than 50 granted international patents. Her current research interests include Internet of Things (IoT), smart health, mobile computing and sensing, wireless networking, as well as cyber security. She is a Fellow of the IEEE and a Fellow of the Hong Kong Academy of Engineering Science (HKAES). Dr. Zhang has received MIT TR100 (MIT Technology Review) world's top young innovator award. She received the Best Paper Awards in several international conferences. Dr. Zhang served as Editor-in-Chief of IEEE Trans. on Mobile Computing (TMC) from 2020 to 2022. She is a member of Steering Committee of IEEE Infocom. Dr. Zhang received the B.S. and Ph.D. degrees from Wuhan University, China, in 1994, and 1999, respectively, all in computer science.

Keynote Speech 2

Security of Large Models: Frontiers and Challenges

Prof. Kui Ren
Zhejiang University

Abstract

The development of Artificial Intelligence (AI) has spanned more than seventy years and has now reached a critical stage with the emergence of large models, leading to a significant paradigm shift in AI's evolution. However, large models also pose several security threats across various domains, including data, model, and content security. Developing a comprehensive security infrastructure to address these challenges is not easy and still needs lots of follow-through. This report delves into the AI security challenges and advancements in the era of large models. Specifically, it highlights the researches undertaken by the School of Cyber Science and Technology at Zhejiang University, focusing on three fundamental areas: data security, model security, and content security in large AI models. Furthermore, this report also discusses the future trends and directions for large AI model security.

Biography

Dr. Kui Ren is a Qiushi Chair Professor at Zhejiang University, an ACM Fellow, IEEE Fellow, and CCF Fellow. He currently serves as the Dean of the College of Cyberspace Research, the Executive Vice Director of the State Key Laboratory of Blockchain and Data Security, and a member of the Academic Committee at Zhejiang University. He has previously held positions as a SUNY Empire Innovation Professor and Director of the Ubiquitous Information Security and Privacy Lab at the State University of New York at Buffalo. Professor Kui Ren's research focuses on data security, privacy protection, AI security, and IoT security. He has led numerous research projects funded by the Ministry of Science and Technology, the National Natural Science Foundation of China, Zhejiang Province's leading innovative teams, the National Science Foundation of the USA, the US Department of Energy, the Research Grants Council of Hong Kong, the National Research Foundation of Korea, Huawei, Alibaba, Ant Group, Amazon, and other institutions and companies, with wide industrial applications of his research findings. Professor Kui Ren has received a series of awards, including the Zhejiang University Guohua Distinguished Scholar Award, the IEEE Security and Privacy Technical Achievement Award, the SUNY Chancellor's Award for Excellence in Scholarship and Creative Activities, the US National Science Foundation CAREER Award, and the Sigma Xi Young Investigator Award. He has published over 400 peer-reviewed journal and conference papers, received several Best Paper and Test-of-Time Paper Awards at venues like ACSAC'22, IEEE ICDCS'20, ACM MobiSys'20, IEEE INFOCOM'20, IEEE Globecom'19, China Cryptology Conference'18, ACM/IEEE IWQoS'17, IEEE ICNP'11, and holds an H-index of 91 with over 46,000 citations. He has been granted more than 30 patents and has been listed as a Highly Cited Researcher by Clarivate Analytics for four consecutive years. Professor Kui Ren currently holds several academic positions, including member of the Committee of the Ministry of Education on Science and Technology, expert group member of the Ministry of Science and Technology on Cyberspace Security Governance, member of the Committee of the Ministry of Education on Higher Education Teaching Guidance, Vice-Chair of the IEEE Computer Society Fellow Evaluation Committee, Chair of the IEEE Information Infrastructure Achievement Award Committee, member of the Steering Committee of the ACM Asia Conference on Computer and Communications Security, Chair of the ACM China Security Chapter, and serves as an editorial board member for several international authoritative journals and as a conference chair for top-tier international conferences.

Panel: 10:45-11:45 14 December 2023 (Thursday) 5/F, Golden Eagle Room A/B

Multi-modal Sensing in the Age of Big Models

Chair: Prof. Lei Xie, Nanjing University, China

Members: Prof. Qian Zhang, Hong Kong University of Science and Technology (HKUST), Hong Kong

Prof. Kui Ren, Zhejiang University, China

Prof. Zhou Su, Xi'an Jiaotong University, China

Prof. Fan Wu, Shanghai Jiao Tong University, China

Prof. Huan Li, Harbin Institute of Technology, Shenzhen campus, China

Biography

Lei Xie is a Professor and vice chair of the Department of Computer Science and Technology in Nanjing University. He is CCF Distinguished Member, CCF Distinguished Speaker. His research interests include multimodal sensing, pervasive and mobile computing, and Industrial Internet of things. He has published over 130 papers in TON, TMC, MOBICOM, UBICOMP, MobiHoc, INFOCOM etc. He has published a monograph "RFID: Principles, Protocols and System Design" in Science Press. He received the first prize of Jiangsu Science and Technology Prize in 2016 and 2019, respectively. His research projects have been reported by a number of many high-end media, including CCTV, Jiangsu City Channel, SoHu, Sina, etc.

Dr. Zhang joined Hong Kong University of Science and Technology (HKUST) in Sept. 2005 where she is now Tencent Professor of Engineering and Chair Professor of the Department of Computer Science and Engineering. She is also serving as the co-director of Huawei-HKUST innovation lab and the director of digital life research center of HKUST. Before that, she was in Microsoft Research Asia, Beijing, from July 1999, where she was the research manager of the Wireless and Networking Group. Dr. Zhang has published more than 400 refereed papers in international leading journals and key conferences. She is the inventor of more than 50 granted international patents. Her current research interests include Internet of Things (IoT), smart health, mobile computing and sensing, wireless networking, as well as cyber security. She is a Fellow of the IEEE and a Fellow of the Hong Kong Academy of Engineering Science (HKAES). Dr. Zhang has received MIT TR100 (MIT Technology Review) world's top young innovator award. She received the Best Paper Awards in several international conferences. Dr. Zhang served as Editor-in-Chief of IEEE Trans. on Mobile Computing (TMC) from 2020 to 2022. She is a member of Steering Committee of IEEE Infocom. Dr. Zhang received the B.S. and Ph.D. degrees from Wuhan University, China, in 1994, and 1999, respectively, all in computer science.

Dr. Kui Ren is a Qiushi Chair Professor at Zhejiang University, an ACM Fellow, IEEE Fellow, and CCF Fellow. He currently serves as the Dean of the College of Cyberspace Research, the Executive Vice Director of the State Key Laboratory of Blockchain and Data Security, and a member of the Academic Committee at Zhejiang University. He has previously held positions as a SUNY Empire Innovation Professor and Director of the Ubiquitous Information Security and Privacy Lab at the State University of New York at Buffalo. Professor Kui Ren's research focuses on data security, privacy protection, AI security, and IoT security. He has led numerous research projects funded by the Ministry of Science and Technology, the National Natural Science Foundation of China, Zhejiang Province's leading innovative teams, the National Science Foundation of the USA, the US Department of Energy, the Research Grants Council of Hong Kong, the National Research Foundation of Korea, Huawei, Alibaba, Ant Group, Amazon, and other institutions and companies, with wide industrial applications of his research findings. Professor Kui Ren has received a series of awards, including the Zhejiang University Guohua Distinguished Scholar Award, the IEEE Security and Privacy Technical Achievement Award, the SUNY Chancellor's Award for Excellence in Scholarship and Creative Activities, the US National Science Foundation CAREER Award, and the Sigma Xi Young Investigator Award. He has published over 400 peer-reviewed journal and conference papers, received several Best Paper and Test-of-Time Paper Awards at venues like ACSAC'22, IEEE ICDCS'20, ACM MobiSys'20, IEEE INFOCOM'20, IEEE Globecom'19, China Cryptology Conference'18, ACM/IEEE IWQoS'17, IEEE ICNP'11, and holds an H-index of 91 with over 46,000 citations. He has been granted more than 30 patents and has been listed as a Highly Cited Researcher by Clarivate Analytics for four consecutive years. Professor Kui Ren currently holds several academic positions, including member of the Committee of the Ministry of Education on Science and Technology, expert group member of the Ministry of Science and Technology on Cyberspace Security Governance, member of the Committee of the Ministry of Education on Higher Education Teaching Guidance, Vice-Chair of the IEEE Computer Society Fellow Evaluation Committee, Chair of the IEEE Information Infrastructure Achievement Award Committee, member of the Steering Committee of the ACM Asia Conference on Computer and Communications Security, Chair of the ACM China Security Chapter, and serves as an editorial board member for several international authoritative journals and as a conference chair for top-tier international conferences.

Zhou Su is the dean of School of Cyber Science and Engineering, Xi'an Jiaotong University, He is also the Chief Scientist of the National Key Research and Development Program, and the highly cited scholar of Elsevier. His research areas include communication network security, IoT security, and security of cyber-physical systems. He has published more than 100 papers in prestigious international journals including IEEE TIFS, IEEE TDSC, IEEE JSAC, and IEEE/ACM ToN, etc. He has received Best Paper Awards at international conferences such as IEEE WCNC 2023, IEEE IWCMC 2022, and IEEE ICC 2020. He is an Associate Editor of IEEE Internet of Things Journal, IEEE Open Journal of Computer Society, etc.

Fan Wu is a professor and chair of the Department of Computer Science and Engineering, Shanghai Jiao Tong University. His research interests include wireless networking and mobile computing, data management, algorithmic network economics, and privacy preservation. He has published more than 200 peer-reviewed papers in technical journals and conference proceedings. He is a recipient of the first class prize for Natural Science Award of China Ministry of Education, China National Fund for Distinguished Young Scientists, ACM China Rising Star Award, CCF-IEEE CS Young Computer Scientist Award, CCF-Tencent ``Rhinoceros bird" Outstanding Award, and CCF-Intel Young Faculty Researcher Program Award. He has served as an associate editor of IEEE Transactions on Mobile Computing, IEEE Transactions on Network Science and Engineering, and ACM Transactions on Sensor Networks, an area editor of Elsevier Computer Networks, and as the member of technical program committees of more than 100 academic conferences.

Dr. Huan Li obtained her PhD degree in Computer Science from the University of Massachusetts at Amherst, USA. She is a Senior Member of IEEE, a research professor at the International Institute of Artificial Intelligence of Harbin Institute of Technology (Shenzhen), visiting professor at Kashi University. Dr. Li's current research areas include: artificial intelligence and intelligent Internet of Things, edge intelligence, intelligent transportation, smart agriculture and new sustainable business and production models for farmers and rural communities. Her work published in ACM Transactions on Sensor Networks, IEEE Networking, IEEE Wireless Communications, Computer Communications, Journal of Systems and Software, IEEE Real-Time and Embedded Technology and Applications Symposium（RTAS）, IEEE International Conference on Robotics and Automation (ICRA), ACM/IEEE Information Processing in Sensor Networks (IPSN) , have been widely cited by the scholars from more than 10 countries and regions, including United States (MIT, CMU, UIUC, UCLA, UPenn etc.), Canada, Germany, France, Israel, Portugal, Belgium, India, South Korea, Brazil, Hong Kong, Taiwan. she has participated as chair or committee member in the organization of more than 30 international academic conferences. She was also invited to provide strategic consulting on digital transformation, smart city, intelligent manufacturing and smart agriculture for government in Shenzhen, Kashgar, as well as well-known enterprises and institutions such as the Second Research Institute of the Civil Aviation Administration of China, Konka, Huawei, Guangdong Architectural Design Institute, and Shenzhen Investment Holdings.

Young Scientists Forum: 14:00-15:45 14 December 2023 (Thursday) 5/F Long Pan Room

Session Chair: Weiwei Wu, Southeast University, China

Young Scientists Forum Session 1

From Crowd Sensing to Crowd Computing —Harnessing the Power of the Crowd

Prof. Bin Guo
Northwestern Polytechnical University

Abstract

Mobile Crowd Sensing (MCS), as a new sensing paradigm that harnesses the power of the crowd, has become a promising research field in recent years. Numerous studies have been done on the research challenges such as optimized worker selection, incentive mechanisms, efficient data transmission, crowd data quality/trust, novel MCS applications, and so on. In this talk, we will discuss about the recent development and future directions of MCS. In particular, we will talk about Crowd Computing, a novel collaborative computing paradigm for heterogeneous Human-Machine-Things fusion, to build a crowd-intelligence computing space with the capabilities of self-organization, self-adaptation, and continuous evolution. We will report the recent progress of our group towards this promising research area.

Biography

Dr. Bin Guo is a professor and vice-dean with the School of Computer Science, Northwestern Polytechnical University, China. He received his Ph.D. degree in computer science from Keio University, Tokyo, Japan, in 2009. His current research interests include Ubiquitous Computing, Mobile Crowd Sensing, and Urban Computing. He has published over 150 papers in refereed journals and conference proceedings such as IEEE Comm. Surveys and Tutorials, ACM Computing Surveys, IEEE TMC, IEEE THMS, UbiComp, CSCW, IJCAI, etc. He has served as an associate editor of IEEE Communications Magazine, IEEE Trans. on Human-Machine-Systems, ACM IMWUT, and so on. He is the program chair of IEEE CPSCom'16, MUE'19, and GPC'20, the general chair of IEEE UIC'24 and AIoTSys'23. He is a senior member of IEEE and a distinguished member of CCF. He received the support of the National Science Fund for Distinguished Young Scholars in 2020, and the support from the National Youth Talent Support Program (Ten Thousand People Plan) in 2017. He is a Highly Cited Chinese Researchers by Elsevier.

Cross-scene Mobile Intelligence

Prof. Hongzi Zhu
Shanghai Jiao Tong University

Abstract

Smart mobile devices, such as smartphones, smart cars, drones, etc., have continuously strengthened their capabilities in communication, storage, computing and other hardware aspects. How to enable such devices to perceive the surrounding world in mobile scenarios and truly become intelligent, there are still many issues to be solved. For example, rapidly changing scenes pose a huge challenge to the accuracy and stability of deep learning model inference. In addition, the computing, storage and communication resources are limited on these devices. How to achieve stable inference across scenes

is a hot issue in academia and industry. This talk uses typical mobile intelligent applications such as smartphone user action recognition and smart car 3D vision as examples to introduce the key technologies of cross-scene mobile intelligence.

Biography

Prof. Hongzi Zhu received his B.S. and M.E. degrees in computer science from Jilin University, China in 2001 and 2004, respectively. He received the PhD degree in computer science from Shanghai Jiao Tong University, in 2009. He was a post-doctoral fellow with the Department of Computer Science and Engineering, Hong Kong University of Science and Technology, and the Department of Electrical and Computer Engineering, University of Waterloo, in 2009 and 2010, respectively. He is a professor with the Department of Computer Science and Engineering, Shanghai Jiao Tong University. His research interests include Internet of Things and mobile computing. He received 2021 First Prize in CCF Natural Science Award and the Best Paper Award from IEEE GLOBECOM 2016. He is an associate editor for IEEE Transactions on Vehicular Technology and IEEE Internet of Things Journal.

Programmable Switch Chips and Schedulers

Prof. Yang Xu
Fudan University

Abstract

The switch chip has undergone rapid development in performance, functionality, and programmability over the past 20 years. This talk will provide an overview of the development of programmable switch chips, starting from aspects such as chip architecture, data plane programming models, programming languages, etc. It will also summarize and discuss the key technologies and technological evolution of the programmable scheduler, an essential module in switch chips.

Biography

Yang Xu is the Yaoshihua Chair Professor in the School of Computer Science at Fudan University. Prior to joining Fudan University, he was a faculty member in the Department of Electrical and Computer Engineering at New York University Tandon School of Engineering. He earned his Ph.D. in Computer Science and Technology from Tsinghua University, China, in 2007 and a Bachelor of Engineering degree from Beijing University of Posts and Telecommunications in 2001. His research interests span various areas, including software-defined networks, data center networks, distributed machine learning, edge computing, network function virtualization, and network security. He has authored over 120 papers published in prestigious journals and conferences, including SIGCOMM, NSDI, INFOCOM, JSAC, TON, ICNP, CoNEXT, ICDCS, and MM. He received the Best Paper Award at ACM CoNEXT 2022 and Best Paper Nomination at ICPP 2023. He holds more than 10 U.S. and international granted patents on diverse aspects of networking and computing. He serves as a Standing Committee Member of the CCF Technical Committee of Internet, a General Vice-Chair of APNET 2024, an Editor for Elsevier Journal of Network and Computer Applications (JNCA), and a Guest Editor for IEEE Journal on Selected Areas in Communications (JSAC) and Wiley Security and Communication Networks Journal.

Young Scientists Forum: 16:00-17:30 14 December 2023 (Thursday) 5/F Long Pan Room

Session Chair: Guangchi Liu, Southeast University, China

Young Scientists Forum Session 2

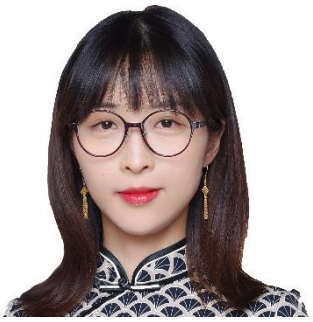
Efficient and Secure AIoT System

Prof. Lan Zhang
University of Science and Technology of China

Abstract

The advancements in perception, communication, computing, and artificial intelligence technologies are driving the rapid development and extensive applications of AIoT systems, enabling them to serve various industrial systems. Faced with the continuous generation of IoT sensory data, efficient and in-depth data understanding for its potential value and ensuring privacy and security have become critical technological bottlenecks in AIoT system applications. This talk will focus on efficient and privacy-preserving security data understanding and intelligent services for multi-source, multi-modal sensory data.

Biography



Lan Zhang is currently a professor in the School of Computer Science and Technology, University of Science and Technology of China. She received her bachelor's degree and Ph.D. degree from Tsinghua University, China. She received 2015 ACM China Doctoral Dissertation Award (2 nationwide) and CCF Outstanding Doctoral Dissertation Award (10 nationwide). She was honored as Alibaba DAMO Academy Young Fellow in 2018 (9 nationwide). Her research interests span mobile computing, privacy protection, data sharing and trading. She has published more than 110 conference and journal papers, including ACM SIGCOMM, ACM MobiCom, USENIX Security, IEEE INFOCOM, IEEE/ACM ToN, IEEE TMC, etc. She has applied more than 70 Chinese patents, 30 of which have been granted. She is the chair of ACM China Hefei Chapter. She is on the editorial board of IEEE Internet of Things, Frontiers of Computer Science, Journal of Cloud Computing and Communications of the CCF. She is or was the TPC member of IEEE INFOCOM 2018-2024, Sensys 2021-2023，IEEE MASS 2017-2023 etc.

Internal Health Monitoring via Millimeter-Wave Sensing

Prof. Anfu Zhou
Beijing University of Posts and Telecommunications

Abstract

Millimeter waves are electromagnetic waves with wavelengths of 1-10 millimeters. They have new characteristics such as high bandwidth, short wavelength, and directional sensing paradigm. Millimeter waves have huge potential in high-resolution sensing and interference-resistant sensing, and can become an effective approach to ubiquitous high-quality sensing for the Internet of Things. The speaker will briefly present research results in physical-space/vibration reconstruction, liquid classification, and gait/gesture recognition. Then the speaker will focus on discussing interdisciplinary research combining millimeter wave sensing with cardiovascular and neuroscience, in order to perceive the internal health status of personnel, including non-invasive continuous blood pressure measurement and mental stress monitoring.

Biography

Anfu Zhou is a Professor at the School of Computer Science, Beijing University of Posts and Telecommunications. His research focuses on the Internet of Thing systems and mobile computing, sponsored by the National Natural Science Foundation of China, National Key R&D Program, etc. His research outcomes have been published at top-tier international conferences and journals including ACM SIGCOMM, ACM MobiCom, USENIX NSDI, IEEE/ACM Transactions on Networking, IEEE Transactions on Mobile Computing, etc, and have been widely applied in industry. He has received awards including CCF-Intel Young Faculty Researcher Award, ACM China Rising Star Award, Alibaba Outstanding Academic Cooperation Award, the First Prize of Science and Technology Progress of Chinese Institute of Electronics.

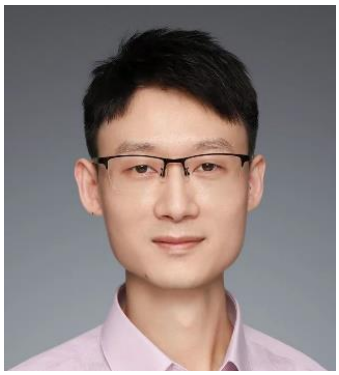
Security on Cross-modality Acoustics Sensing

Prof. Feng Lin
Zhejiang University

Abstract

Acoustic security is paramount in today's digital era, particularly as device interconnectivity accelerates through the Internet of Things (IoT). By protecting personal and confidential information, it upholds privacy and cultivates trust among users—key components for the continued evolution and uptake of voice-driven technologies. Expanding beyond traditional acoustic monitoring, cross-modality sensing enables the conversion of data across wireless, electromagnetic, and visual signals into auditory information. In this presentation, we will explore cutting-edge research in cross-modality acoustic sensing security, tackling both offensive and defensive strategies. We will delve into the nuances of speech injection attacks, wireless side-channel eavesdropping, and multimodal authentication techniques.

Biography



Feng Lin is currently a “Hundred Talents” Young Professor with the School of Cyber Science and Technology, College of Computer Science and Technology in Zhejiang University. He was an Assistant Professor with the University of Colorado Denver, USA, a Research Scientist with the State University of New York (SUNY) at Buffalo, USA, and an Engineer with Alcatel-Lucent (currently, Nokia). His current research interests include Internet of Things security, smart vehicle security, and AI security. He has published more than 120 research papers in mobile computing and security areas, including Oakland, CCS, Security, NDSS, MobiCom, MobiSys, SenSys, and UbiComp. Dr. Lin was a recipient of the Young Chang Jiang Scholar, ACM SIGSAC China Rising Star Award, Best Paper Awards from ACM MobiSys’20, IEEE Globecom’19, IEEE/ACM CHASE’22, IEEE BHI’17, Best Demo Award from ACM HotMobile’18, and the Best Paper Award Nomination from ACM SenSys’21 and IEEE INFOCOM’21. He serves as an editor for IEEE Network, TPC Chair of ACM Morse’22, and TPC member of MobiCom, SenSys, MobiHoc, IPSN, ICDCS.

Technical Program (Beijing Time, UTC+8)

Thursday, 14 December 2023

Thursday, 14 December 2023 | 14:00-15:45 (Beijing Time)

The First International Workshop on Metaverse-based Sensing, Computing, and Networking (MetaSCN)

Session 1 (7/F, Meeting Room 1, 14:00-14:50)
Session Chair: Pengfei Wang, Dalian University of Technology, China

Joint Client Selection and Training Optimization for Energy-Efficient Federated Learning
Kang Yan, Nina Shu, Tao Wu, Chunsheng Liu, Jun Huang and Jingbo Yu

Both Sides Needed: A Two-Dimensional Measurement Study of Email Security Based on SPF and DMARC
Han Zhang, Libo Chen, Ming Liu, Yong Shi, Songyang Wu and Zhi Xue

A Novel Data Aggregation Scheme for Wireless Sensor Networks Based on Residue Number System with Nonpairwise-Prime Moduli
Jinxin Zhang and Fuyou Miao

Identifying Fine-Grained Douyin User Behaviors via Analyzing Encrypted Network Traffic
Yuhang Shan, Guang Cheng and Zihan Chen

Do Non-competing Data Intermediaries Matter?
Cheng Chi, Wenqu Chen and Jinqiu He

The Fifth International Workshop on Network Meets Intelligent Computations (NMIC 2023)

Session 1 (7/F, Meeting Room 1, 14:55-15:45)
Session Chair: Lei Yang, South China University of Technology, China

Enhancing Intersection Signal Control: Distribution Double Dueling Deep Q-learning Network with Priority Experience Replay and NoisyNet Approach
Yue He, Mu Chen and Yu Sun

A Greedy Algorithm-based Approach for Dynamic Carpooling Matching and Route Selection in Ride-hailing
Yu Sun, Chen Mu, Jing Sun and Yue He

Evolution-Driven Deep Meta-Learning Algorithm for Multi-Objective Combinatorial Optimization
Jiajun Chen

A Weakly Supervised Learning Framework for Parkinson's Disease Assessment Using Wearable Sensor
Ziheng Li, Xiyang Peng, Yuting Zhao, Po Yang, Xulong Wang and Yun Yang

A Lightweight Method for Android Malware Classification Based on Teacher Assistant Distillation
Junwei Tang, Qiaosen Pi, Jin Huang, Ruhan He, Tao Peng, Xinrong Hu and Wenlong Tian

Thursday, 14 December 2023 | 14:00-15:45 (Beijing Time)

The Fourth International Workshop on Artificial Intelligence Applications in Internet of Things (AI^{2}OT 2023)

Session 1 (7/F, Meeting Room 3, 14:00-14:40)
Session Chair: Yanchao Zhao, Nanjing University of Aeronautics and Astronautics, China

Maximizing Throughput in Unmanned Surface Vehicle Relay System under Jamming Attacks
Zhang Heng, Wu Lei, Sun Zhemin, Zhang Zhikai, Li Ming, Li Hongran and Zhang Jian

An Efficient Skip Link-based Traffic Prediction Algorithm with Multi-Scale Feature Extraction
Chaoqun Liu, Xuanpeng Li, Guangyu Li and Chen Gong

SemiGest: Recognizing Hand Gestures via Visible Light Sensing with Fewer Labels
Jifei Zhu, Ziwei Liu, Yimao Sun and Yanbing Yang

Multi-Level ACE-based IoT Knowledge Sharing for Personalized Privacy-Preserving Federated Learning
Jing Wang, Xi Lin, Jun Wu, Qinghua Mao, Bei Pei and Jianhua Li

The Fifth International Workshop on Network Softwarization Techniques for IoT Application (SoftIoT 2023)

Session 1 (7/F, Meeting Room 3, 14:45-15:45)
Session Chair: Bo Xu, Nanjing University of Posts and Telecommunications, China

Collaborative Service Placement and Request Scheduling in Mobile Edge Networks
Bin Tang, Nuo Yu, Fen Han, Jiakai Gong and Yuan Ge

Comparing Different Neural Network Models on Subway Traffic Volume Forecast
Yanfei Jiang, Lian Wen, Shaoyang Zhang and Yongli Liu

Similarity-aware Contract Design for Multi-task Federated Learning in Vehicular Networks
Bo Xu, Haitao Zhao, Haiguang Lai and Xiaozhen Lu

AI-Based 3D UAV Coverage Deployment for Internet of Vehicles in the Complex Mountain Environment
Pengfei Du, Tingyue Xiao, Ziyue Liu and Chaojin Qing

Performance Analysis of Multi-RIS Aided Communication Under Weibull Fading
Longze Li, Haitao Zhao, Wenxue Sun, Zhuoran Xu, Yihang Jia and Shuyi Ma

HAMF: Highly Adaptable Multi-graph Fusion for Cross-domain Graphs
Jie Li, Jiaqi Liu and Bin Guo

Thursday, 14 December 2023 | 16:00-17:30 (Beijing Time)

The Fifth International Workshop on Network Softwarization Techniques for IoT Application (SoftIoT 2023)

Session 2 (7/F, Meeting Room 3, 16:00-17:30)
Session Chair: Haotong Cao, Nanjing University of Posts and Telecommunications, China

Blueberry Flower Detection Algorithm Based on Improved Yolov8
Rongli Gai, Huatian Zhang, Zhibin Guo, Xiangzhou Kong and Shan Qin

An Indoor Positioning Method Based on Quadratic Space Judgment
Wang Yuxi, Song Wanyu, Zhang Zheng, Li Longze and Ni Yiyang

Trace6: A Practical Threatener Traceback Model in IPv6 Network
Chaoqiang Yang, Liancheng Zhang, Yi Guo, Wenhao Xia, Ming Hu and Jichang Wang

Virtual Target Based Multi-agent Surrounding Approach
Weiping Zhu, Haoyang Li, Ning Ding, Yukang Chen, Yufei Sun, Chao Ma and Wei Li

Main Conference Day 1 (Beijing Time, UTC+8)

Thursday, 14 December 2023

Thursday, 14 December 2023 | 08:30-09:00 (Beijing Time)

Opening Ceremony

Thursday, 14 December 2023 | 09:00-09:45 (Beijing Time)

Keynote Speech 1: Human-Centric Contactless Sensing Design in the Age of AIoT
Prof. Qian Zhang, Hong Kong University of Science and Technology (HKUST), China

Thursday, 14 December 2023 | 09:45-10:30 (Beijing Time)

Keynote Speech 2: Security of Large Models: Frontiers and Challenges
Prof. Kui Ren, Zhejiang University, China

Thursday, 14 December 2023 | 10:45-11:45 (Beijing Time)

Panel Discussion
Chair: Prof. Lei Xie, Nanjing University, China
Members: Prof. Qian Zhang, Hong Kong University of Science and Technology (HKUST), Hong Kong
Prof. Kui Ren, Zhejiang University, China
Prof. Zhou Su, Xi'an Jiaotong University, China
Prof. Fan Wu, Shanghai Jiao Tong University,China
Prof. Huan Li, Harbin Institute of Technology, Shenzhen campus, China

Thursday, 14 December 2023 | 14:00-15:45 (Beijing Time)

Young Scientists Forum (Session 1)
Session Chair: Weiwei Wu, Southeast University, China

From Crowd Sensing to Crowd Computing—Harnessing the Power of the Crowd
Prof. Bin Guo, Northwestern Polytechnical University, China

Cross-scene Mobile Intelligence
Prof. Hongzi Zhu, Shanghai Jiao Tong University, China

Programmable Switch Chips and Schedulers
Prof. Yang Xu, Fudan University, China

Thursday, 14 December 2023 | 16:00-17:30 (Beijing Time)

Young Scientists Forum (Session 2)
Session Chair: Guangchi Liu, Southeast University, China

Efficient and Secure AIoT System
Prof. Lan Zhang, University of Science and Technology of China, China

Internal Health Monitoring via Millimeter-Wave Sensing
Prof. Anfu Zhou, Beijing University of Posts and Telecommunications, China

Security on Cross-modality Acoustics Sensing
Prof. Feng Lin, Zhejiang University, China

Thursday, 14 December 2023 | 16:00-17:30 (Beijing Time)

Track 1 Session 1: Sensing, Monitoring, and Tracking Systems (7/F, Meeting Room 1, 16:00-17:30)
Session Chair: Linqing Gui

MMHeart: An Efficient Heartbeat Monitoring System Based on MIMO mmWave Radar
Linqing Gui, Ling Deng, Cheng Peng, Hui Cai, Biyun Sheng, Zhengxin Guo and Fu Xiao

Effi-MAOT: A Communication-Efficient Multi-Camera Active Object Tracking
Maolong Yin, Zhuo Sun, Bin Guo and Zhiwen Yu

LiDAR based Cooperative Sensing in Vehicular Edge Computing
Luyao Jiang, Kai Liu, Chunhui Liu, Hualing Ren, Guozhi Yan, Feiyu Jin and Songtao Guo

PAssTrack: Practical and Accurate Passive Human Tracking System Using Commodity Wi-Fi
Boxiao Zhang and Panlong Yang

LoCount: Long-distance Crowd Counting Based on LoRa Signal
Sihan Ma, Xiangmao Chang, Yifan Zhang and Lele Zheng

Main Conference Day 2 (Beijing Time, UTC+8)

Friday, 15 December 2023

Friday, 15 December 2023 | 08:30-10:00 (Beijing Time)

Track 1 Session 2: Crowd Sensing and Mobile Computing (7/F, Meeting Room 1, 08:30-10:00)
Session Chair: Ding Ding

Age-of-Information Driven Mobile Crowdsensing in Wireless Edge Computing
Shan Su, Haixing Xu, Liang Wang, Bin Guo and Zhiwen Yu

GRAIM: Game and Reverse Auction based Incentive Mechanism in Mobile Crowd Sensing
Guisong Yang, Jinwei Wu, Jiacai Li, Xingyu He, Yunhuai Liu and Fanglei Sun

WiFi-based Device-free Passive Multi-targets Localization Using Multi-Label Learning
Xinping Rao, Lianghuang Huang, Yugen Yi and Min Yu

An Energy-Efficient Smartphone Positioning Scheme by Fusing WiFi, GPS, and PDR
Yankan Yang and Baoqi Huang

Impact of Feature Selection and CIR Window Length on NLoS Classification for UWB Systems
Elisei Ember, Jesus Pestana, Michael Krisper, Michael Stocker, Kay Roemer, Carlo Alberto Boano and Pablo Corbalán Pelegrín

Friday, 15 December 2023 | 08:30-10:00 (Beijing Time)

Track 2 Session 1: Federated Learning (7/F, Meeting Room 3, 08:30-10:00)
Session Chair: Feng Shan

Toward Quality-Aware Reverse Auction-based Incentive Mechanism for Federated Learning
Jialing Ni, Pan Qi and Jianfeng Lu

Heterogeneity-Aware Federated Learning with Adaptive Local Epoch Size in Edge Computing
Wenying Yao, Tong Liu, Yangguang Cui and Yanmin Zhu

Communication Efficient Personalized Federated Learning via Hierarchical Clustering and Layer-wise Aggregation
Mingchang Shuang, Zhe Zhang and Yanchao Zhao

The Improved Data Aggregation Scheme for Wireless Sensor Networks Based on Robust Chinese Remainder Theorem
Jinxin Zhang and Fuyou Miao

Friday, 15 December 2023 | 08:30-10:00 (Beijing Time)

Track 3 Session 1: Watermarking and Fingerprinting (7/F, Meeting Room 5, 08:30-10:00)
Session Chair: Rufan Bai

Adaptive Robust Watermarking for Color Images
Bingling Luo, Hongxia Wang, Fei Zhang, Jinghong Xia and Heng Wang

Living in the Past: Analyzing BLE IoT Devices Based on Mobile Companion Apps in Old Versions
Jianqi Du, Zidong Zhang, Fenghao Xu and Wenrui Diao

MASA: Measurement and Analysis of MAC Address Randomization with Sniffer Array
Yu Yu, Yulian Pan, Wenjia Wu and Ming Yang

Web Fingerprint Defense with Timing-assistant Traffic Burst Shaping
Bo Chen, Chen Yang, Can Wang and Xuangou Wu

Friday, 15 December 2023 | 10:15-11:45 (Beijing Time)

Track 1 Session 3: Networking Protocols and Optimization (7/F, Meeting Room 1, 10:15-11:45)
Session Chair: Guanyu Gao

Software-Defined Collaborative Scheduling of Computing and Network Resources
Bo Wang, Zihui Luo, Xiaolong Zheng, Liang Liu and Huadong Ma

TSFCC: The Two-Stage Fast Congestion Control Algorithm Based on Software Defined Networking
Hongxiang Wang, Yifei Lu and Zhen Wang

An Adaptive MAC Protocol for Energy Harvesting Wireless Sensor Networks in Harsh Environment
Fei Gao, Wuyungerile Li, Nisuna Bao and Bing Jia

Dynamic Power Control Method Based on Stacked SRU Network Combined with NoisyNet DQN for CRN
Lei Wang, Yonghua Wang and Bingfeng Zheng

Deep Reinforcement Learning based Channel Allocation for Channel Bonding Wi-Fi Networks
Yan Zhong, Hao Chen, Lizhao You, Wei Liu, Taotao Wang and Liqun Fu

Friday, 15 December 2023 | 10:15-11:45 (Beijing Time)

Track 2 Session 2: Edge Computing (7/F, Meeting Room 3, 10:15-11:45)
Session Chair: Guangchi Liu

EKDF: An Ensemble Knowledge Distillation Framework for Robust Collaborative Inference on Heterogeneous Edge Devices
Shangrui Wu, Yupeng Li, Yang Xu, Qin Liu, Weijia Jia and Tian Wang

A Meta Reinforcement Learning-based Scheme for Adaptive Service Placement in Edge Computing
Jianfeng Rao, Tong Liu, Yangguang Cui and Yanmin Zhu

Lyapunov-Based Computation Rate Maximization for Wireless Powered Edge Computing
Senlei Bao, Shubin Zhang, Kaikai Chi, Xiaolong Chen and Wei Gao

ECADA: An Edge Computing Assisted Delay-Aware Anomaly Detection Scheme for ICS
Chao Sang, Jun Wu, Jianhua Li and Wu Yang

A Method for Person Re-Identification and Trajectory Tracking in Cross-Device Edge Environments
Jian An, Yunxiang Zhao, Feifei Wang, Xin He and Xiaolin Gui

Friday, 15 December 2023 | 10:15-11:45 (Beijing Time)

Track 3 Session 2: Defense (7/F, Meeting Room 5, 10:15-11:45)
Session Chair: Xiangyu Xu

Crossfire Attack Defense Method Based on Virtual Topology
Lei Guo, Shan Jing, Liang Wei and Chuan Zhao

ShuffleCAN: Enabling Moving Target Defense for Attack Mitigation on Automotive CAN
Huiping Qian, Hao Han, Xiaojun Zhu and Fengyuan Xu

A Lightweight Zone Authentication Scheme with Auto-Refreshing Pseudonyms for C-V2X
Xijie Ba, Jiaqi Yang and Cong Ma

An Improved Capsule Network for DGA Domain Detection
Hongyu Yang, Tao Zhang, Ze Hu, Liang Zhang and Xiang Cheng

A Novel Permission Filtering Approach for Android Malware Detection and Malware Family Classification
Jiyun Yang, Can Gui, Zhibo Zhang and Wanli Liu

Friday, 15 December 2023 | 14:00-15:30 (Beijing Time)

Track 1 Session 4: UAV and Satellite Network (7/F, Meeting Room 1, 14:00-15:30)
Session Chair: Chenchen Fu

Handover Probability in 3D Mobile UAV Cellular Networks
Siyuan Zhou, Xiaojing Liu, Bin Tang and Guoping Tan

Secure Ultra-reliable and Low Latency Communication in NOMA-UAV Networks
Xiao Zhao, Kan Yu, Xiaowu Liu and Chuanwen Luo

An Interference Mitigation Strategy for LEO Satellite Systems based on Adaptive Beamforming with Sidelobe Suppression
Huadong Guo, Weiqing Huang, Wen Wang, Jinglong Guo and Zhaohua Qiu

Handover Analysis with Spatially Correlated Blockage Model
Siyuan Zhou, Xiaofan Yu, Bin Tang and Zhihao Qu

Distributed Cooperative Search Algorithm with Information Screening
Chengliang Wang and Jiayi He

Friday, 15 December 2023 | 14:00-15:30 (Beijing Time)

Track 2 Session 3: Task Offloading (7/F, Meeting Room 3, 14:00-15:30)
Session Chair: Le Chang

Joint Task Scheduling and Container Image Caching in Edge Computing
Fangyi Mou, Zhiqing Tang, Jiong Lou, Jianxiong Guo, Wenhua Wang and Tian Wang

QoS Aware Resource Management in Mobile Edge Computing for Emerging Artificial Intelligence (AI) Applications
Zimo Ma and Jun Zhao

Deep Reinforcement Learning for QoE-Aware Offloading in Space-Terrestrial Integrated Networks
Xia Deng, Guole Lin, Le Chang and Fei Tong

ROIAdaptor: Adaptive Task Offloading of ROI-Encoded Videos for Edge Video Analytics
Zhenxuan Xu, Xiaolin Guo, Zhaowu Huang and Fang Dong

Dynamic Content Cache Strategy Based on Content Prediction in the Internet of Vehicles
Shujuan Tian, Song Zou, Yi Tan, Dongsu Shen and Yanchun Li

Friday, 15 December 2023 | 14:00-15:30 (Beijing Time)

Track 3 Session 3: Anomaly Detection (7/F, Meeting Room 5, 14:00-15:30)
Session Chair: Ruiting Zhou

CNN-PSO-KELM: A Deep Learning Intrusion Detection Model for Imbalanced IoT Data
Fei Lv, Rongkang Sun, Hangyu Wang, Meng Zhang, Shuaizong Si, Zhe Bu, Chengsheng Zhou and Limin Sun

Robust Intrusion Detection for Industrial IoT
Huaishuo Ren, Liangyi Gong, Xiuliang Mo, Lanqi Yang and Zuwei Yin

Communication-Efficient Federated Learning for Network Traffic Anomaly Detection
Xiao Cui, Xiaohui Han, Guangqi Liu, Wenbo Zuo and Zhiwen Wang

SWDNet: Stealth Web Shell Detection Technology based on Triplet Network
Jinli Zhang, Feng Dai, Yaqin Cao, Ru Tan, Xiang Cui and Qixu Liu

Arrow: Capture the Inaudible Attacker in 3D Space via Smart-speaker
Zhenfei Zhang, Ping Li, Biaokai Zhu, Panlong Yang and Zhao Lv

Friday, 15 December 2023 | 15:45-17:15 (Beijing Time)

Track 4 Session 1: Federated Learning (7/F, Meeting Room 1, 15:45-17:15)
Session Chair: Wanyuan Wang

FedSG: Subgraph Federated Learning on Multiple Non-IID Graphs
Yingcheng Wang, Songtao Guo and Dewen Qiao

A Straggler-resilient Federated Learning Framework for Non-IID Data Based on Harmonic Coding
Weiheng Tang, Lin Chen and Xu Chen

Two-way Delayed Updates with Model Similarity in Communication-Efficient Federated Learning
Yingchi Mao, Zibo Wang, Jun Wu, Lijuan Shen, Shufang Xu and Jie Wu

Decentralized Subgoal Tree Search for Multiagent Planning without Priors or Communication
Qian Che, Yixuan Li, Ziyao Peng, Wanyuan Wang and Yichuan Jiang

Communication-Efficient Personalized Federated Learning on Non-IID Data
Xiangqian Li, Chunmei Ma, Baogui Huang and Guangshun Li

Friday, 15 December 2023 | 15:45-17:15 (Beijing Time)

Track 2 Session 4: IoT and Digital Twins (7/F, Meeting Room 3, 15:45-17:15)
Session Chair: Xiaolin Fang

DPG-DT: Differentially Private Generative Digital Twin for Imbalanced Learning in Industrial IoT
Siyuan Li, Xi Lin, Gaolei Li, Lixing Chen, Siyi Liao and Jianhua Li

Reinforcement Learning Based Friendly Jamming for Digital Twins Against Active Eavesdropping
Kunze Li, Yuxiao Ren, Zhiping Lin and Liang Xiao

ACORN: Adaptive Compression-Reconstruction for Video Services in 5G-U Industrial IoT
Jiale Lei, Peihao Yang, Linghe Kong, Yehan Ma, Xingjian Lu, Deyu Lin, Guihai Chen and E Zhao

Accurate Deep Learning Inference Latency Prediction over Dynamic Running Mobile Devices
Junquan Fan, Jiahui Hou and Xiangyang Li

Mobile User Pairing Scheme in NOMA-Enabled Backscatter Communication Networks
Tingpei Huang, Shiyu Guo, Hu Zhu, Jianhang Liu and Shibao Li

Friday, 15 December 2023 | 15:45-17:15 (Beijing Time)

Track 3 Session 4: Privacy (7/F, Meeting Room 5, 15:45-17:15)
Session Chair: Kai Dong

Optimizing Privacy-Accuracy Trade-off in DP-FL via Significant Gradient Perturbation
Benteng Zhang, Yingchi Mao, Zijian Tu, Xiaoming He, Ping Ping and Jie Wu

EPT: Enhancing User Transparency for Confidential Smart Contract
Juan Du, Zhicheng Xu, Duanyang Liu, Xiaoli Zhang and Hongbing Cheng

A Non-Intrusive and Real-Time Data Provenance Method for DDS Systems
Siyi Wei, Jinbin Tu and Yun Wang

A Lightweight Privacy-Preserving Data Sharing Scheme Supporting Intelligent Pricing in Smart Grid
Xinyang Li, Yujue Wang, Yong Ding, Yijie Zhou, Changsong Yang, Zhenwei Guo and Chunhai Li

Adaptive and Efficient Participant Selection in Vertical Federated Learning
Jiahui Huang, Lan Zhang, Anran Li, Haoran Cheng, Jiexin Xu and Hongmei Song

Main Conference Day 3 (Beijing Time, UTC+8)

Saturday, 16 December 2023

Saturday, 16 December 2023 | 08:30-10:00 (Beijing Time)

Track 4 Session 2: Big Data (7/F, Meeting Room 1, 08:30-10:00)
Session Chair: Tongxin Zhu

A Hypernetwork-based Personalized Federated Learning Framework for Encrypted Traffic Classification
Yichen Wei, Guang Cheng, Tian Qin and Zihan Chen

FedCME: Client Matching and Classifier Exchanging to Handle Data Heterogeneity in Federated Learning
Jun Nie, Danyang Xiao, Weigang Wu and Lei Yang

CFPA: Cognitive Federated Partial Adaptation for Effective Personalization
Xiaohui Wei, Didi Jiao, Shiyu Tong, Zijian Li, Chenghao Ren and Hengshan Yue

MDP: Model Decomposition and Parallelization of Vision Transformer for Distributed Edge Inference
Weiyan Wang, Yiming Zhang, Yilun Jin, Han Tian and Li Chen

Saturday, 16 December 2023 | 08:30-10:00 (Beijing Time)

Track 6 Session 1: Advanced Applications (7/F, Meeting Room 3, 08:30-10:00)
Session Chair: Qin Liu

Incentive Mechanism Based on Double Auction for Federated Learning in Satellite Edge Clouds
Qiufen Xia, Zhou Xu and Zhuangze Hou

Auction-Based Dynamic Resource Allocation in Social Metaverse
Nan Liu, Tom H. Luan, Yuntao Wang, Yiliang Liu and Zhou Su

B3A: Bokeh Based Backdoor Attack with Feature Restrictions
Junjian Li, Honglong Chen, Yudong Gao, Kai Lin and Yuping Liu

Minimal Substitution-based Label Propagation for Anomalous Blockchain Detection
Ranran Wang, Zhaokang Zhang, Yiran Wang and Yin Zhang

Saturday, 16 December 2023 | 08:30-10:00 (Beijing Time)

Track 3 Session 5: Network Security (7/F, Meeting Room 5, 08:30-10:00)
Session Chair: Li Lu

Supvirus: A Scenario-Oriented Feature Poisoning Attack Approach in SplitFed Learning
Yuxin Zhao, Guangyu Wu, Jiahui Hou and Xiang-Yang Li

Data Poisoning Attack Based on Privacy Reasoning and Countermeasure in Federated Learning
Jiguang Lv, Shuchun Xu, Yi Ling, Dapeng Man, Shuai Han and Wu Yang

Efficient Side-Channel Attack through Balanced Labels Compression and Variational Autoencoder
Nengfu Cai, Zhiqin Yang, Shuhai Wang, Yanling Jiang, Mingsheng Liu and Gang Li

LDfuzz: A Directed Greybox Fuzzer for Solidity Smart Contract
Jiangtao Liao, Huidan Hu, Keke Huang, Huasong Jin and Changlu Lin

BypTalker: An Adaptive Adversarial Example Attack to Bypass Prefilter-enabled Speaker Recognition
Qianniu Chen, Kang Fu, Li Lu, Meng Chen, Zhongjie Ba, Feng Lin and Kui Ren

Saturday, 16 December 2023 | 10:15-11:45 (Beijing Time)

Track 4 Session 3: Deep Learning (7/F, Meeting Room 1, 10:15-11:45)
Session Chair: Xiang Liu

Secure Mutual Learning with Low Interactions for Deep Model Training
Wenxing Zhu and Xiangxue Li

TSTR: A Real-Time RGB-Thermal Semantic Segmentation Model with Multimodal Fusion Transformers
Guoqiang Zhao, Xiaoyun Yan, Aodie Cui, Chang Hu, Jiaqi Bao and Junjie Huang

A Well-Designed Regularization Scheme for Latent Factorization of High-Dimensional and Incomplete Water-Quality Tensors from Sensor Networks
Xuke Wu, Lan Wang, Mingjiang Xie and Kun Shan

Multi-Stage Vehicle Dispatch for Community Group-buying Logistics via Deep Reinforcement Learning
Lingyi Xu, Xingyuan Liang, Xiaolei Zhou and Tian He

Lipreading using Joint Perception Temporal Convolutional Network
Xihui Li, Zhenhua Tan, Ziwei Cheng and Xiaoer Wu

Saturday, 16 December 2023 | 10:15-11:45 (Beijing Time)

Track 6 Session 2: Smart City (7/F, Meeting Room 3, 10:15-11:45)
Session Chair: Yan Lyu

Improved LSTM Algorithm for WBGT Index Prediction in Smart Cities
Kai Ding, Yidu Huang, Ming Tao, Renping Xie, Xueqiang Li and Shuling Yang

A Group-oriented Authentication Scheme for IoT Devices in 5G Networks
Qili Guo, Chengzhe Lai, Haoyan Ma and Dong Zheng

Edge Servers on Wheels: Deployment and Route Planning of Mobile Servers for Internet of Vehicles
Zhihai Tang, Aiwen Huang, Yonghua Wang, Le Chang and Tian Wang

Smart Card Auto-Selection Using GPS and WiFi Fingerprints for Smartphones
Xingying Wang, Linwen Zhang, Hang Tu, Qin Liu and Man Zhou

A Spatio-Temporal Tree and Gauss Convolutional Network for Traffic Flow Forecasting
Zhaobin Ma, Zhiqiang Lv, Jianbo Li and Fengqian Xia

Saturday, 16 December 2023 | 10:15-11:45 (Beijing Time)

Track 5 Session 1: Systems, Tools and Testbed (7/F, Meeting Room 5, 10:15-11:45)
Session Chair: Vincent Chau

A Scheduling Optimization Mechanism Combining Q-learning and Genetic Algorithm
Xue Wang, Xingwei Wang, Jie Jia, Xijia Lu and Min Huang

RLink: Accelerate On-Device Deep Reinforcement Learning with Inference Knowledge at the Edge
Tianyu Zeng, Xiaoxi Zhang, Daipeng Feng, Jingpu Duan, Zhi Zhou and Xu Chen

DeepSpectrum: A Deep-Learning-based Spectrum Identification for Wireless Signals
Jiongkun Su, Junmei Yao, Ruitao Xie and Kaishun Wu

FedIR: Learning Invariant Representations from Heterogeneous Data in Federated Learning
Xi Zheng, Hongcheng Xie, Yu Guo and Rongfang Bie

Harnessing Edge Computing Resources for Accelerating Industrial Tasks
Tao Xing, Helei Cui, Yaxing Chen, Zihui Luo, Bin Guo, Zhiwen Yu, Xiaobing Guo and Yirong Ma