

Proceedings

**2023 International Conference
on Networking and Network Applications**

NaNA 2023

August 18 - 21, 2023

Crowne Plaza Qingdao Ocean Spring Resort, Qingdao, China

Technical Sponsors

Shandong Computer Science Center, China

Xidian University Qingdao Institute of Computing Technology, China

Jinan University, China

Future University Hakodate, Japan

Chuzhou University, Chuzhou, China

Ikueikan University, Japan



Conference Schedule

Date	Time	Conference Program		
2023-8-18	9:00-21:00	Registration at Crowne Plaza Qingdao Ocean Spring Resort		
2023-8-19	08:30-13:00	Registration at Crowne Plaza Qingdao Ocean Spring Resort		
	08:30-08:45	Welcome Speech (Norio Shiratori)		
	08:45-09:00	Opening Remarks (Dawei Zhao)		
	09:00-09:10	Group Photo Taken		
	09:10-10:00	Keynote Speech 1 (Prof. Bishnu Prasad Gautam)		
	10:00-10:20	Coffee break		
	10:20-11:10	Keynote Speech 2 (Prof. Zuqing Zhu)		
	11:10-12:00	Keynote Speech 3 (Prof. Zhongzhi Han)		
	12:00-14:30	Lunch		
	14:30-16:05	Session A1(Milan Hall)	Session B1(Athens Hall)	Session C1(Lausanne Hall)
	16:05-16:25	Coffee break		
	16:25-18:00	Session A2(Milan Hall)	Session B2(Athens Hall)	Session C2(Lausanne Hall)
	18:00-21:00	Gala		
2023-8-20	08:30-10:05	Session A3(Milan Hall)	Session B3(Athens Hall)	Session C3(Lausanne Hall)
	10:05-10:25	Coffee break		
	10:25-12:00	Session A4(Milan Hall)	Session B4(Athens Hall)	Session C4(Lausanne Hall)
	12:00-14:00	Lunch		
	14:30-16:05	Session A5(Milan Hall)	Session B5(Athens Hall)	Session C5(Lausanne Hall)
	16:05-16:25	Coffee break		
	16:25-18:00	Session A6(Milan Hall)	Session B6(Athens Hall)	Session C6(Lausanne Hall)
	18:00-20:00	Dinner		
2023-8-21	08:30-10:20	Session A7(Milan Hall)		
	10:20-11:00	Closing Remarks		
	11:00-11:30	Free discussion		
	11:30-12:00	TPC Meeting		

Opening Remarks and Keynotes(Jing Hua Gong), Milan Hall, Athens Hall&Lausanne Hall are all at the Crowne Plaza Qingdao Ocean Spring Resort.

Greeting Message from General Conference Chairs

It is our pleasure to welcome you all to the 2023 International Conference on Networking and Network Applications (NaNA2023) in Qingdao, China! We also like to welcome all the eminent speakers and guests from within and outside China and from different walks of life who have come here to share with us their vast knowledge and expertise. We believe that the carefully planned programs of the conference and the amazing city of Qingdao will offer you all irresistible attractions.

The NaNA2023 is technically sponsored by Shandong Computer Science Center, China; Xidian University Qingdao Institute of Computing Technology, China; Jinan University, China; Future University Hakodate, Japan; Chuzhou University, Chuzhou, China; Ikueikan University, Japan. At this very moment, we would like to thank the program committees and the organizing staffs for their hard work. We would also like to deliver our appreciation to the keynote speakers for their great contributions to this conference.

This conference aims to gather researchers from different areas and disciplines to present results and participate in discussions under the common themes of Wireless Networks, Optical Networks and Data Center (DC) Networks, Network Management, Monitoring and Automation, Network Applications and AI/ML in Networks. It is expected that the interactions provided by the conference will facilitate a better understanding of the diversity of different approaches as well as of their similarities. In addition, it will open the way for the application of approaches that have been successful in one area to problem solving in other different areas.

Without taking too much of your time, we wish you all successful deliberations, stimulating discussions, and new friendships the conference can offer. We look forward to receiving your contributions to the conference in the future.

NaNA2023 General Co-Chairs

Shihyu Chang, San Jose State University, USA

Wei Zhang, Shandong Computer Science Center, China

Weili Han, Fudan University, China

August 19, 2023

Committees

CONFERENCE ORGANIZERS:

Honorary General Chairs:

Norio Shiratori, Chuo University/Tohoku University, Japan

Dawei Zhao, Shandong Computer Science Center, China

General Co-Chairs:

Shihyu Chang, San Jose State University, USA

Wei Zhang, Shandong Computer Science Center, China

Weili Han, Fudan University, China

Technical Program Committee Co-Chairs:

Masaru Fukushi, Yamaguchi University, Japan

Peiying Zhang, China University of Petroleum, China

Yongdong Wu, Jinan University, China

Jinbo Xiong, Fujian Normal University, China

The Finance Chair:

Xuanwen Hao, Shaanxi Normal University, China

Publication and Registration Co-Chairs:

Xuanwen Hao, Shaanxi Normal University, China

Xinlei Wang, Xi'an Aeronautical University, China

Local Arrangement Chairs:

Lizhuang Tan, Shandong Computer Science Center, China

Bo Liu, Shaanxi Normal University, China

Track Co-Chairs:

Track 1: Wireless Networks

Gabriel-Miro Muntean, Dublin City University, Ireland

Changqiao Xu, Beijing University of Posts and Telecommunications, China

Chi Zhang, University of Science and Technology of China, China

Haizheng Yu, Xinjiang University, China

Track 2: Optical Networks and Data Center (DC) Networks

János Tapolcai, Budapest University of Technology and Economics, Hungary

Massimo Tornatore, Politecnico di Milano, Italy

Wei Su, Beijing Jiaotong University, China

Track 3: Network Management, Monitoring and Automation

Bishnu Prasad Gautam, Kanazawa Gakuin University, Japan

Guilin Chen, Chuzhou University, China

Masaru Fukushi, Yamaguchi University, Japan

Track 4: Network Applications

Vajirasak Vanijja, King Mongkut's University of Technology Thonburi, Thailand

Xiaojiang Chen, Northwest University, China

Limei Peng, Kyungpook National University, South Korea

Ayong Ye, Fujian Normal University, China

Track 5: AI/ML in Networks

Zhuo Ma, Xidian University, China

Shihyu Chang, San Jose State University, USA

Bin Yang, Chuzhou University, China

Krishna Bhattacharai, Ikueikan University, Japan

Steering Chairs:

Pin-Han Ho, University of Waterloo, Canada

Xiaohong Jiang, Future University Hakodate, Japan

Yulong Shen, Xidian University, China

Advisory Committee:

Nirwan Ansari, New Jersey Institute of Technology, USA

Achille Pattavina, Politecnico di Milano, Italy

Xinbing Wang, Shanghai Jiao Tong University, China

Yunhao Liu, Tsinghua University, China

Tarik Taleb, Oulu University, Finland

Jianwei Huang, The Chinese University of Hong Kong

Aleksandra Smiljanic, University of Belgrade, Serbia

Ben Liang, University of Toronto, Canada

Naijie Gu, University of Science and Technology of China, China

Hirendra Man Pradhan, Kathmandu Engineering College, Nepal

Technically sponsored by:

Shandong Computer Science Center, China

Xidian University Qingdao Institute of Computing Technology, China

Jinan University, China

Future University Hakodate, Japan

Chuzhou University, Chuzhou, China

Ikueikan University, Japan

Keynote Speech 1:

A Proposal of Future-Ready STNA (Sustainable and Trustable Network Architecture) Design Principles for Securing IoT Networks and Responsible AI

Prof. Bishnu Prasad Gautam

Kanazawa Gakuin University, Kanazawa, Ishikawa, Japan



Abstract: In this talk, we propose a Future-Ready Sustainable and Trustable Network Architecture (STNA) that's specifically designed to secure IoT networks and promote responsible AI practices. Our objective is to spearhead new advancements in network security, paving the way for a future-oriented network ecosystem characterized by trust, reliability, adaptability, and sustainability. The proposed STNA is a pioneering solution that proactively tackles the progressive challenges emerging within computer networks, IoT, and responsible AI. It proposes a sustainable and trustable layer that aspires to include comprehensive features such as monitoring, security, and sustainability functionalities, all grounded in state-of-the-art technologies. We present a robust framework along with a set of design principles tailored to keep pace with rapid technological advancements and emerging security threats. Our research emphasizes the critical importance of embedding sustainable and trustable layer within existing network architectures. By utilizing scalable and flexible design principles, efficient resource allocation strategies, and adaptive security measures, the Future-Ready STNA provides a resilient, forward-thinking solution. This architecture facilitates seamless integration of emerging technologies, ensuring continuous security of IoT networks and the ethical implementation of AI.

CV: Prof. Bishnu received his master's and Ph.D. in Computer Engineering from Shinshu University, Japan. He has published over 50 papers in international journals and international conferences. He has been invited as a key speaker in several International Workshop, Conferences and Universities. He is currently working as Professor (Full) at Kanazawa Gakuin University, and he is a member of IEEE, IPSJ and IAENG. His current research interest includes Sustainable Computing, Distributed Computing Architecture, Network Architecture, Network Security, and IoT. He was a recipient of Highest Score Award (IPA), Highest Championship award and Championship Prize (General) of ET Robotic Championship Contest in 2018, Japan. He has obtained several awards in international conferences and academic societies.

Keynote Speech 2:

Knowledge-defined Network Virtualization: When Programmable Data Plane meets Artificial Intelligence

Prof. Zuqing Zhu

University of Science and Technology of China, China



Abstract: In this talk, we discuss recent advances on the network slicing technologies for effectively supporting emerging applications such as high-definition video streaming, virtual reality, remote surgery, etc, in future networks. Specifically, in order to satisfy the stringent quality-of-service (QoS) requirements of such applications, one needs innovation in at least three aspects, i.e., the data plane, virtualization layer, and control plane. For the data plane, we introduce the programmable data plane (PDP) techniques that can make packet processing and forwarding protocol-independent. Hence, PDP enables improved programmability, flexibility and application-awareness in substrate networks, which are the fundamental elements of network slicing. The virtualization layer needs to virtualize, allocate and isolate the resources in the substrate network to build virtual network slices according to applications' QoS demands. Here, we discuss the open-source platforms to make the virtualization layer work seamlessly with PDP. Finally, the control plane needs to be adaptive for dynamic slicing. Therefore, we consider how to implement a smart control plane by leveraging artificial intelligence (AI), which can analyze telemetry data from the data plane, and make smart and timely decisions to support various applications well.

CV: Prof.Zhu received his Ph.D. degree from the Department of Electrical and Computer Engineering, University of California, Davis, in 2007. From 2007 to 2011, he worked in the Service Provider Technology Group of Cisco Systems, San Jose, California, as a Senior Engineer. In January 2011, he joined the University of Science and Technology of China, where he currently is a Full Professor and vice Dean of the School of Information Science and Technology. He has published 360+ papers in peer-reviewed journals and conferences. He is an editorial board member of IEEE Transactions on Communications, IEEE Transactions on Network and Service Management, Optics Express, Optical Switching and Networking, and others. He is the Steering Committee Chair of the IEEE International Conference on High Performance Switching and Routing (HPSR), and the Chair of the Technical Committee on Optical Networking (ONTN) in ComSoc. He has received the Best Paper Awards from ICC 2013, GLOBECOM 2013, ICNC 2014, ICC 2015, and ONDM 2018. He is a Fellow of IEEE and a Senior Member of Optica (formerly OSA).

Keynote Speech 3:

Progress of Computer Vision Applications in Agricultural Engineering

Prof. Zhongzhi Han

Qingdao Agricultural University, China



Abstract: Computer vision is becoming increasingly pervasive in the field of agricultural engineering. An illustration of its current scope is provided by the analysis of existing computer vision algorithms and their various applications. Such algorithms are being deployed for computer-aided quality detection, crop monitoring, soil analysis, and weed detection, to name a few use cases. Moreover, different deep learning models, such as convolutional neural networks, recurrent neural networks, and supervised learning algorithms, are being utilized to further enhance the capabilities of the computer vision systems. As such, this report will lay out the prospects of computer vision in agricultural engineering, analyzing the impact of existing techniques and exploring potential future applications of the technology. Ultimately, after a comprehensive analysis of existing computer vision techniques and potential applications of machine learning in this field, the report will present an overview of the current state of computer vision in agricultural engineering, as well as implications for future growth and development in this area.

CV: Prof. Han is currently a full professor at the School of Information Science, Qingdao Agricultural University. As a prestigious Taishan Scholar, he has successfully headed over 20 national, provincial and municipal projects, and authored/co-authored more than a hundred scholarly papers and released two academic books. His many achievements have been acknowledged with awards such as Shandong Science and Technology Progress Award. His research is predominantly interdisciplinary, spanning the fields of computer vision, artificial intelligence and modern agriculture. He was one of the initial academics in China to conduct intelligent inspection and monitoring of food safety and crop phenotypes. Thanks to his outstanding accomplishments, his exceptional contribution to rural revitalization was mentioned by mainstream media such as CCTV and Science and Technology Daily.

Opening Remarks and Keynotes(Jing Hua Gong)

2023-8-19 8:30-12:00			
Time	Conference Program	Spokesman	Chairman
08:30-08:45	Welcome Speech	Norio Shiratori	Yulong Shen
08:45-09:00	Opening Remarks	Dawei Zhao	Yulong Shen
09:00-09:10	Group Photo Taken		Yun Wang
09:10-10:00	Keynote Speech 1	Bishnu Prasad Gautam	Xiaohong Jiang
10:00-10:20	Coffee break		
10:20-11:10	Keynote Speech 2	Zuqing Zhu	Yanping Chen
11:10-12:00	Keynote Speech 3	Zhongzhi Han	Peiying Zhang

The Tencent conference is used for online participation, the relevant information is shown in the following table.

Time	Conference Theme	Conference ID	Conference Password
2023.8.19-2023.8.19 08:30-12:00	Opening Remarks and Keynote Speech	50887627523	895612
2023.8.19-2023.8.21 08:30-18:00	SessionA1-A7	50887627523	895612
2023.8.19-2023.8.20 08:30-18:00	SessionB1-B6	39472914925	895612
2023.8.19-2023.8.20 08:30-18:00	SessionC1-C6	38736393911	895612

Track 1:Wireless Networks

2023-8-19 14:30-16:05 Milan Hall				
Session A1 Chair: Jun Liu Vice-chairs:Tao Zhang and Yan'e Wang				
ID	Time	Author	Title	Type
247	14:30-14:45	Haitao Du, Li Su, Shen He, Jie Bai and Ru Yan	Requirements and Potential Key Technologies of Security for 6G Mobile Network	Short
360	14:45-15:00	Yuyang Huang, Jian Mu, Yuzhen Wang and Renmin Zhao	A Review of Authentication Methods in Internet of Drones	Short
381	15:00-15:15	Kaijun Wu, Bo Tian and Xue Wang	Data Security Storage Scheme For UAV Cluster Based On Distributed Storage	Short
623	15:15-15:30	Yulin Teng, Pinchang Zhang, Yangyang Liu and Xin Liu	PHY-layer Authentication with Hardware Impairments in UAV-aided Communication Systems	Short
987	15:30-15:45	Jun Liu, Tianyu Zhang, Hewu Li, Qian Wu, Shaowen Zheng and Lu Lu	A Risk Path Detection Based Trusted Delivery Mechanism in Integrated Satellite and Terrestrial Internet	Short
4451	15:45-16:05	Yang Dong, Gong Kai, Zhang Weiting, Guo Kuo and Chen Jia	EnDRTS: Deep Reinforcement Learning based Deterministic Scheduling for Chain Flows in TSN	Long
16:05-16:25 Coffee Break				
2023-8-19 16:25-18:00 Milan Hall				
Session A2 Chair:Tao Zhang Vice-chairs:Jun Liu and Hong Xia				
ID	Time	Author	Title	Type
1650	16:25-16:40	Lei Chen, Fei Yu, Siyuan Ni, Yuyao Wang and Yuhang He	A Survey of Trust Assessment Technology Research for Edge Computing	Short
1680	16:40-16:55	Boyou Yi	Hybrid Resource Sharing Solution in Virtual Wireless Networks	Short
3092	16:55-17:10	Han Li, Zhiwei Zhang, Hao Duan, Yi He and Ning Xi	A Real-time Attack Detection Scheme Based on Multi-source Information with False Flag Data	Short
3122	17:10-17:25	Siyuan Li, Liumei Zhang and Yu Han	LMIPv6ATK:A Labeled Dataset Containing Multiple ICMPV6-DDOS Attacks	Short
3192	17:25-17:40	Sibo Wang, Bin Yang, Wu Wang, Shikai Shen and Xiaohong Jiang	On UAV-IRS-Aided Covert Communication of D2D-Enabled Cellular Networks	Short
3555	17:40-18:00	Jin Liu, Zan Li, Qiguang Miao and Li Yang	A Novel Detector Based on Adaptive Bistable Stochastic Resonance for Spectrum Sensing at Low Signal-to-Noise Ratio	Long

2023-8-19 14:30-16:05 Athens Hall				
Session B1 Chair: Cong Gao Vice-chairs:He Zhu and Jun Yan				
ID	Time	Author	Title	Type
3643	14:30-14:45	Tong Zhang, Wei Wei, Yichuan Wang, Xi Deng, Lei Zhu and Wenjiang Ji	Formal Modeling and Defense Methods for 5G Network Endpoint Access Denial of Service Attacks	Short
5609	14:45-15:00	Xiao Liu, Zhao Huang and Quan Wang	Evolutionary Equilibrium of Mining Pools under DDoS Attacks in Blockchain System	Short
5203	15:00-15:20	Hikofumi Suzuki, Akiyoshi Iwasa, Takumi Uchiyama and Katsumi Wasaki	Man-machine Cooperative Monitoring System to Support Detection of DoS/DDoS Attacks through Continuous SOM Diagram Generation	Long
4297	15:20-15:35	Yuan Yuan and Wei Su	A Game Theory-Based Strategy for Allocating and Offloading Computing Resources in 5G Networks	Short
4716	15:35-15:50	Yuyao Wang, Lei Chen, Siyuan Ni, Fei Yu, Yuanhang He, Qiang Fang and Yuzheng Zhou	Research on Privacy Preserving Computing Technology in Edge Computing	Short
4916	15:50-16:05	Lei Huang, Huiling Shi, Wei Zhang and Kun Yu	Block Transmission Scheduling Strategy Based on Deadline Priority	Short
16:05-16:25 Coffee Break				
2023-8-19 16:25-18:00 Athens Hall				
Session B2 Chair: He Zhu Vice-chairs:Cong Gao and Li Li				
ID	Time	Author	Title	Type
6921	16:25-16:40	Jinyu Fan, Jiayi Li, Chunjiao Li, Yuheng Du, Yahan Lyu	Research on Safe-Content Distribution Technology in VANETs	Short
7168	16:40-16:55	Siyuan Ni, Yuanhang He, Lei Chen, Yuyao Wang and Fei Yu	A Survey of Edge Computing Resource Allocation Strategies Based on Federated Learning	Short
7500	16:55-17:10	He Zhu, Huihui Wu and Xiaohong Jiang	Jamming with Zero-forcing Beamforming for Covert Communication in MIMO Systems	Short
7925	17:10-17:25	Xinzhe Pi, Bin Yang and Xiaohong Jiang	Covert Terahertz Communication for UAV-Aided Wireless Relay Systems	Short
8420	17:25-17:40	Jiang Mo, Ke Zhao, and Limei Peng	Joint Deployment of LAU and HAU for Hierarchical Space-Air-Ground Communications	Short
8555	17:40-18:00	Yihuai Yang, Shikai Shen, Yumei She, Wu Wang, Bin Yang and Yangshui Gao	Joint Covert and Secure Communications for Intelligent Reflecting Surface (IRS)-Aided Wireless Networks	Long

Track 2: Optical Networks and Data Center (DC) Networks

2023-8-19 14:30-16:05 Lausanne Hall				
Session C1 Chair: Yuanyu Zhang Vice-chairs: Di Lu and Zhen Jia				
ID	Time	Author	Title	Type
486	14:30-14:45	Weigang Ma, Dengfang Hu, Yichuan Wang and Zhoukai Wang	E-PBFT: An Improved Consensus Mechanism Based on PBFT	Short
1645	14:45-15:00	Teng Liu, Menghan Shang, Haoshuo Li and Tao Zhang	Enhancing Robustness Against Heterogeneity via Class-Difficulty Based Weights	Short
2670	15:00-15:15	Guoyi Cao, Wanghao Mo, Zhaozhen Wu and Yaqi Shen	Research on Lightweight Human Pose Estimation Model Based on Knowledge Distillation	Short
3004	15:15-15:30	Yifan Deng, Liangmin Wang, Liang Wang, Jiayi Li, Quan Yong	A Survey on Automatic Discover Approach by using Static Analysis for Smart Contract Vulnerability	Short
3524	15:30-15:45	Yaling Zhang, Jingjing Chen, Yichuan Wang, Yeqiu Xiao and Xiaoxue Liu	A Novel On-demand Service Architecture for Efficient Cloud-edge Collaboration	Short
7217	15:45-16:05	Yulu Yang, Jingce Yang, Han Xu, Jing Hu and Tiecheng Song	Trajectory and Offloading Policy Optimization in Age-of-Information-aware UAV-assisted MEC Systems	Long
16:05-16:25 Coffee Break				
2023-8-19 16:25-18:00 Lausanne Hall				
Session C2 Chair: Di Lu Vice-chairs: Yuanyu Zhang and Jiaqing Bai				
ID	Time	Author	Title	Type
3594	16:25-16:40	Hongbin Zhang, Yikang Bai, Dongmei Zhao, Bin Liu, Ying Xu	A Study on a Reduced Indicator System for the Network Security Situational Assessment Model	Short
5641	16:40-16:55	Yichuan Wang, Jianhua Tie, Xinhong Hei, Li Zhao and Xiaohui Zhang	A Trusted Privacy-preserving Model for Cross-chain Transactions Based On ZK_SNARKs	Short
6185	16:55-17:10	Yubao Zhang, Lin Tang, Lixuan Che, Chaozhang Liu, Entang Li, Hongwei Xing, Jianhui Zhang and Guandong Di	Privacy-preserving Multi-user Joint Data Logistic Regression Inference Scheme	Short
6654	17:10-17:25	Lu Lin, Jiayi Li and Yuzhen Wang, Qiong Wang	A Survey on Cross-Chain Asset Transfer Schemes: Classification, Challenges, and Prospects	Short
7329	17:25-17:40	Jianping Wang, Zhiyu Li, Guohong Gao, Yingying Lv, Yuxin Ma and Guanglan Chen	ST-MobileNetV3: A Lightweight Network Model for Strawberry Disease Identification	Short
8408	17:40-18:00	Yanhua Niu, Shuai Gao, Zhang Hong-Ke and Yuanjia Gong	A Decentralized Quality Management Scheme for Content Moderation	Long

Track 3: Network Management, Monitoring and Automation

2023-8-20 8:30-10:05 Milan Hall				
Session A3 Chair:Laifeng Lu Vice-chairs:Pinchang Zhang and Zewei Guo				
ID	Time	Author	Title	Type
806	8:30-8:45	Xin Guo, Lisheng Ma, Zhiwei Zhang and Jiandong Wang	Failure-Aware Service Request Protection in LEO Satellite Constellation Networks	Short
2119	8:45-9:00	Kun Yu and Suruo Li	SRv6-based In-band Network Telemetry: Architecture and Strategy	Short
2634	9:00-9:15	Weicong Huang, Jieying Zhou, Minghui Jin, Zheng Han and Sijia Wei	Research on Secure Data Circulation and Sharing Protection Technology Framework for Power Monitoring System	Short
1378	9:15-9:35	Yi Yin, Dongmei Zhao, Xufei Li and Shuiguang Zeng	Learning Based Preamble Collision Detection of Cellular Random Access by Physical Layer Features	Long
5216	9:35-9:50	Lingui Ma, Fan Yang and Tingting Chen	A Rapid Configuration Mechanism Based on Load Measurement for NETCONF in SDN Networks	Short
5702	9:50-10:05	Changduo Wu, Fan Yang and Ting Zheng	A Time Slot averaging Algorithm for Delay Sensitive Service of Small Particle Time in Slicing Packet Networks	Short
10:05-10:25 Coffee Break				
2023-8-20 10:25-12:00 Milan Hall				
Session A4 Chair: Pinchang Zhang Vice-chairs:Xinzhe Pi and Jia Liu				
ID	Time	Author	Title	Type
5948	10:25-10:40	Jiahong Lai, Fan Yang, Chaoran Ying and Wenchao Song	Spatial-Temporal Correlation-based Prediction Model for Node and Link Residual Resources in NFV Networks	Short
8241	10:40-10:55	Lei Zhang, Huiling Shi, Kuichao Zhang, Hongyang Sun and Wei Zhang	GraphMal: A Network Malicious Traffic Identification Method Based on Graph Neural Network	Short
8607	10:55-11:10	Rui Wang, Donglan Liu, Xin Liu, Lei Ma, Hao Zhang, Yong Wang, Zhenghao Li, Fangzhe Zhang and Lili Sun	An ASN.1 UPER Encoding based Fuzzing method for Radio Resource Control Protocol	Short
8912	11:10-11:30	Xiaojian Tian and Zuqing Zhu	On the Topology Scaling of Interplanetary Networks	Long
8403	11:30-11:45	Ming Zhao, Qize Guo, Hao Yu and Tarik Taleb	Deep Reinforcement Learning-based Task Offloading over In-Network Computing and Multi-Access Edge Computing	Short
8627	11:45-12:00	Weigang Ma, Yaping Yu, Yichuan Wang, Xiaoxue Liu and Zhoukai Wang	A Pseudonym Exchange-based Traceable Location Privacy Protection Scheme for IoV	Short

Track 4: Network Applications

2023-8-20 8:30-10:05 Athens Hall				
Session B3 Chair: Kaijun Wu Vice-chairs:Wu Wang and Yan Liu				
ID	Time	Author	Title	Type
191	8:30-8:45	Jipeng Cui and Zhongyuan Jiang	EDF: Enhanced Deep Fingerprinting attacks on Websites	Short
878	8:45-9:00	Zhiheng Zhang, Zeyu Liu, Li Yang, Tingbo Zhe and Jian Wu	Security Risk Assessment of Image Classification Model Based on ANP-TOPSIS	Short
1048	9:00-9:15	Xin Zhang, Yanbo Yang, Minchao Li, Baoshan Li, Teng Li and Jiawei Zhang	Research on Activation Functions in Machine Learning Based Network Coding	Short
1746	9:15-9:30	Zheng Dang, Xinhong Hei, Hao Chen and Yilong Liu	A Digital Twin Framework for Logical Range	Short
2260	9:30-9:45	Yutong Wang, Yu'E Jiang and Yu Feng	Covert Communication-assisted Computation Offloading Schemes in Blockchain-Enabled IoT	Short
3014	9:45-10:05	Chunhui Hu and Jianfeng Chen	A Dimensional Perspective Analysis on the Cybersecurity Risks and Opportunities of ChatGPT-like Information Systems	Long
10:05-10:25 Coffee Break				
2023-8-20 10:25-12:00 Athens Hall				
Session B4 Chair:Wu Wang Vice-chairs:Kaijun Wu and Yang Xu				
ID	Time	Author	Title	Type
3351	10:25-10:40	Yang Li, Qingyang Zhang, Jun Cheng, Yiyuan Zhou, Jie Cui, Hong Zhong	Attribute-based Verifiable Outsourcing Decryption Encryption Scheme in IIoT	Short
3417	10:40-10:55	Wei Wei, Feng Zang, Liben Huang and Mingxiao Bai	Product Retrieval Based on Subtractive Angular Margin Loss	Short
3823	10:55-11:10	Lifeng Guo, Mengfei Jia, Zhuoheng Xu and Xialei Zhang	Efficient Fine-grained Forward Secure Encryption Scheme Based on Attributes in Mobile Healthcare	Short
4059	11:10-11:25	Chaozhang Liu, Lin Tang, Lixuan Che, Yubao Zhang, Hongwei Xing, Jianhui Zhang, Entang Li and Xiangyang Li	Research On Cross-chain Consensus Models In Complex Trust Environments	Short
4533	11:25-11:40	Lifeng Guo, Lingxia Wang, Xueke Ma and Xialei Zhang	New Traceable and Revocable Attribute Based Encryption on Lattices	Short
8458	11:40-12:00	Xinlu Zhuang, Zeyu Xiao, Haoping Qin and Yunjie Ge	An Efficient and Scalable Consensus for Main Blockchain in the Multi-Chain Network	Long

2023-8-20 8:30-10:05 Lausanne Hall				
Session C3 Chair: Guozhu Zhao Vice-chairs:Jianping Wang and Shuangrui Zhao				
ID	Time	Author	Title	Type
4803	8:30-8:45	Feng Zang, Wei Wei, Liben Huang and Weiqi Shen	UAV Camera Re-localization Based on Image Retrieval	Short
4825	8:45-9:00	Lulu Gao, Xiaonan Li and Zhicheng Wei	Taxi Station Location Model Based on Spatio-temporal Demand Cube	Short
4983	9:00-9:15	Qiong Di, Chaoran Ying, Fan Yang, Qing Yu and Yaxin Ren	A Delay Guarantee Mechanism Based on Active and Passive Measurement in SDN Networks	Short
5159	9:15-9:30	Jun Yan, Yi Tian, Wenli Wang, Yijun Zhang, Yihui Zhou and Laifeng Lu	A Local Differential Privacy Based Method to Preserve Link Privacy in Mobile Social Network	Short
3801	9:30-9:50	Zhenyu Guan, Yang Zhang, Shizhong Li, Ruonan Chen and Dawei Li	Scaling Blockchain via a Lightweight Tree-based Sharding System	Long
5715	9:50-10:05	Xiaolong Chen, Yue Zhao and Qi Zhao	Distributed Storage Method for Data Security Sharing and Exchange	Short
10:05-10:25 Coffee Break				
2023-8-20 10:25-12:00 Lausanne Hall				
Session C4 Chair: Jianping Wang Vice-chairs:Guozhu Zhao and Yihui Zhou				
ID	Time	Author	Title	Type
5841	10:25-10:40	Pengliang Shi and Dongning Hao	Cloud Data Deduplication Scheme Based on Blockchain	Short
5968	10:40-10:55	Fangwei Wang, Man Yan, Qingru Li and Changguang Wang	A Multivariate Time Series Anomaly Detection Model Based on Spatio-Temporal Dual Features	Short
6273	10:55-11:10	Wenli Wang, Yihui Zhou, Yijun Zhang, Jun Yan and Laifeng Lu	Joint Distribution Analysis of Multi-dimensional Randomized Response	Short
6551	11:10-11:25	Huayuan Jiang, Xin Xie, Jianan Fan, Shicong Hou and Huan Chen	Online Tobacco Width Detection Based on Skeleton Detection Algorithm	Short
7084	11:25-11:40	Taoyi Zhang, Yubo Wang and Zhicheng Wei	STGAT: A Spatio-Temporal Graph Attention Network for Travel Demand Prediction	Short
9895	11:40-12:00	Yu Wang and Naijie Gu	Classification of Hash Functions Based on Anti-attack Ability	Long

Track 5: AI/ML in Networks

2023-8-20 14:30-16:05 Milan Hall				
Session A5 Chair: Ji He Vice-chairs:Xiaolan Liu and Chan Gao				
ID	Time	Author	Title	Type
163	14:30-14:45	Kaixin Li, Limei Peng and Pin-Han Ho	GNN-based Data Rate Maximization for Double Intelligent Reflecting Surface (IRS)-aided Communication System	Short
316	14:45-15:00	Ruiyan Liu, Tengchao Ma, Yiting Huang, Qingzhao An, Lin Yan and Jiangyuan Li	Cost-sensitive Cold Start Latency Optimization Mechanism in Function-as-a-Service	Short
653	15:00-15:15	Wenjiang Ji, Yixin Yang, Yaling Zhang, Yichuan Wang, Mengjie Tian and Yuan Qiu	DDoS Attack Detection Based on Information Entropy Feature Extraction in Software Defined Networks	Short
1626	15:15-15:35	Ji He, Xiaodan Zhang, Baoquan Ren, Hongjun Li, Tianzhu Hu, Xiangwu Gong and Xudong Zhong	ML-based Detection Approaches for Covert Communication with Multi-D Signal Features	Long
1696	15:35-15:50	Cong Shen and Wei Zhang	Privacy Enhanced Federated Learning via Privacy Masks and Additive Homomorphic Encryption	Short
1912	15:50-16:05	Suwan Tang and Wu Wang	The Differential Privacy Framework for Convolutional Neural Network using PATE,ADLM and SGD models	Short
16:05-16:25 Coffee Break				
2023-8-20 16:25-18:00 Milan Hall				
Session A6 Chair: Xiaolan Liu Vice-chairs:Ji He and Huanhuan Zhao				
ID	Time	Author	Title	Type
1924	16:25-16:40	Lei Zhu, Miaoqing Wen, Tong Zhang, Yichuan Wang, Jing Wang, Mingsong Yang and Bing Ma	A Text Classification Method of Network Public Opinion Based on Information Fusion	Short
2102	16:40-17:00	Mengfan Xu, Jin Li and Yingying Liu	PPKD: Privacy-preserving Knowledge Distillation for Large Model	Long
2344	17:00-17:15	Jie Gao, Zhihong Liu and Yong Zeng	Topological Loss on Graph Auto-encoders	Short
2402	17:15-17:30	Hong Xia, Bo Wang, Yongkang Zhang and Yanping Chen	Hierarchical Clustering Combination Method Using Intuitionistic Fuzzy Similarity in Software Module Clustering	Short
2991	17:30-17:45	Qiuling Chen, Ayong Ye, Fengyu Wu and Huang Zhang	Leverage Generative Adversarial Network for Enhancing Fairness and Utility	Short
4535	17:45-18:00	Ziwen Wang, Baihe Ma, Zhihong Liu, Yong Zeng, Zhe Wang and Kaichao Shi	DLPriv: Deep Learning based Dynamic Location Privacy Mechanism for LBS in Internet-of-Vehicles	Short

2023-8-20 14:30-16:05 Athens Hall				
Session B5 Chair:Huihui Wu Vice-chairs:Bin Yang and Mengfan Xu				
ID	Time	Author	Title	Type
3827	14:30-14:50	Chengxuan Li, Zhou Yang, Yang Xiao, Haozhao Liu, Yuning Zhang and Qingqi Pei	Defense Against Adversarial Attacks via Adversarial Noise Denoising Networks in Image Recognition	Long
5787	14:50-15:05	Shuang Yang and Li Li	Improving Bipartite Network Embedding with Partially Available Vertex Content	Short
4949	15:05-15:20	Guohong Gao, Chengchao Wang, Jianping Wang and Yingying Lv	UD-YOLOv5s: Recognition of Cattle Regurgitation Behavior Based on Upper and Lower Jaw Skeleton Feature Extraction	Short
5211	15:20-15:35	Wei Wei, Feng Zang Liben Huang and Wei Xue	A Comparison of Finetune and Meta Learning Methods for Few-Shot Object Detection in Sonar Images	Short
5659	15:35-15:50	Jini Li, Man Zhang and Yu Lai	A Light-weighted Machine Learning Based ECU Identification for Automotive CAN Security	Short
5800	15:50-16:05	Yifan Li, Yinglin Wang, Chunjie Cao, Qianlin Dong, Haoran Li and Jingzhang Sun	Radiofrequency Fingerprint Feature Extraction and Recognition Using a Coordinate Attention-guided Deep Residual Shrinkage Network	Short
16:05-16:25 Coffee Break				
2023-8-20 16:25-18:00 Athens Hall				
Session B6 Chair: Bin Yang Vice-chairs:Huihui Wu and Bello Ahmad Muhammad				
ID	Time	Author	Title	Type
3914	16:25-16:45	Yiteng Wang, Zhe Ren and Wei Wang	A Robust and Scalable One-PUF-to-Many Authentication and Key Agreement Scheme for Mobile Communication Network	Long
6360	16:45-17:00	Yumeng Shen, Feng Tian, Qiaoling Lu and Kemeng Cui	A Deep Model Intellectual Property Protection Method Supporting Public Verification	Short
6439	17:00-17:15	Xihua Ma, Youliang Tian and Zehua Ding	Resisting Membership Inference Attacks By Dynamically Adjusting Loss Targets	Short
6497	17:15-17:30	Huang Meng, Zhao Shenghui, Sun Kaichuan and Zhao Yuyan	A Detection Method for Alzheimer's Disease Based on Long-Term Visual Features	Short
7049	17:30-17:45	Mu Xianyu, Tian Youliang, Xiong Jinbo, Wang Shuai and Gong Boxiang	FLAP:Federated Learning Aggregation Scheme Based on Privileged Secret Sharing	Short
7184	17:45-18:00	Qi Zheng and Haizheng	B-pet:The PET Model With Parameter-Efficient Learning	Short

2023-8-20 14:30-16:05 Lausanne Hall				
Session C5 Chair: Zhiwei Zhang Vice-chairs:Ranran Sun and Wei Tong				
ID	Time	Author	Title	Type
7300	14:30-14:45	Jianping Wang, Xueyan Zhang, Guohong Gao and Yingying Lv	OP-Mask R-CNN: An Advanced Mask R-CNN network for Cattle Individual Recognition on Large Farms	Short
6422	14:45-15:05	Wei Dong, Zan Zhou, Shujie Yang, Yibo Lian, Hongjing Li and Changqiao Xu	Least Co-Residence: A Novel Virtual Migration Algorithm for Mitigating Side-Channel Attacks	Long
7559	15:05-15:20	Yu Feng, Yu'E Jiang and Yutong Wang	GAN-Based Covert Communications Against an Adversary with Uncertain Detection Threshold in Federated Learning Networks	Short
8182	15:20-15:35	Peng Xu, Ziyi Zhao and Sugang Ma	Real-time Semantic Segmentation Algorithm Based on Tversky Loss function and mixed pooling	Short
8242	15:35-15:50	Menghan Shang, Ze Tong, Teng Liu and Tao Zhang	Privacy-preserving Federated Learning Against Byzantine Attack via Top-k Indexes	Short
8840	15:50-16:05	Jinyuan Zhao, Di Jia and Qian Wang	Correction Algorithm of Multi-person Pose Estimation Based on Improved YOLOv5	Short
16:05-16:25 Coffee Break				
2023-8-20 16:25-18:00 Lausanne Hall				
Session C6 Chair: Lisheng Ma Vice-chairs:Wei Tong and Ranran Sun				
ID	Time	Author	Title	Type
7424	16:25-16:45	Yuhua Wang and Jianming Zhu	Locally Differential Private Federated Learning with Controllable Perturbation Domains	Long
8890	16:45-17:00	Fei Deng, Shikai Shen, Bin Yang, Jun He, Kaiguo Qian, Sunyan Hong and Xuanxuan Li	Joint Location and Power Optimization for Secure Communications in Multi-UAVs Enabled Cellular Networks	Short
9005	17:00-17:15	Changbing Bi, Youliang Tian, Ta Li, Hua Zhou and Shihong Wu	An Efficient Blockchain-based Certificateless Anonymous Authentication Scheme for VANETs	Short
9133	17:15-17:30	Yubo Wang, Taoyi Zhang and Zhicheng Wei	A Deep Reinforcement Learning Approach for Online Taxi Dispatching	Short
9208	17:30-17:45	Jingsen Jiao, Huihui Wu, Ranran Sun, Qifeng Miao and Yizhi Cao	Covert Communication in the D2D-Enabled Cellular Network with Multiple Non-Colluding Wardens	Short
9408	17:45-18:00	Lin Tang, Yubao Zhang, Lixuan Che, Chaozhang Liu, Hongwei Xing, Jianhui Zhang, Entang Li and Chonghao Xu	Research on NAS-oriented Blockchain Aggregation Consensus Algorithm	Short

2023-8-21 8:30-10:20 Milan Hall				
Session A7 Chair: Xuening Liao Vice-chairs:Xinzhe Pi and Mubarak Umar				
ID	Time	Author	Title	Type
2356	8:30-8:45	ZiJian Chen and Limei Peng	Performance Evaluation for Grant-free NOMA System Using Hybrid SCMA-OFDM	Short
8180	8:45-9:00	Ruiqi Zeng, Yiru Niu and Lanfei Qiao	A Novel Construction Technology of Microservice Multi-instance System Automatic Deployment and Upgrade	Short
8139	9:00-9:20	Lu Fan, Zhao Huang, Junjun Wang, Lirong Zhou, Yi'An Zhu and Quan Wang	A Novel Configurable RO-Obfuscated PUF Design With Machine Learning Immunity	Long
8485	9:20-9:35	Guoqing Pan, Yuan Chang, Haoquan Qi and Qiang Hu	Web Service Category Recommendation with Feature Word Semantic Enhancement and Tag Co-occurrence	Short
8774	9:35-9:50	Qimiao Zeng, Yirong Zhuang, Jinxia Hai, Qing pan, Zhifan Yin, Qi Chen and Jie Liang	Challenges of Livecast Computing Network: A Contemporary Survey	Short
9460	9:50-10:05	Qi Zhao, Bo Tian and Yiming Liu	The Design Method of Micro-unit Cryptographic Service Framework	Short
9499	10:05-10:20	Yujuan Cao, Zhao Liu, Wuhe Axi, Dawei Wei and Ning Xi	Physical-Sensing Inconsistency Vulnerability Mitigation for Multi-UAV Crowdsensing	Short

Contact Us

Publication and Registration Co-Chairs:

Xuanwen Hao, Xinlei Wang

Email: nanaconference@126.com

Download the zip of CD_ROM of NaNA2023 Conference

Website: www.nana-conference.org/download2023.html

Username: nanaconference@126.com

Password: NaNA2023

Conference Guide Information



Surrounding Tourist Attractions



Beijiushui Scenic Spot



The Old Town of Jimo



Linghai Hot Spring Golf Club



Jinshan Ski Resort



Baohou Equestrian Town



Qiangou Mountain Organic Farm