Proceedings

2021 International Conference on Networking and Network Applications

NaNA 2021

October 29 - November 1, 2021

Lijiang Culture and Tourism College, Lijiang, China

Technical Sponsors

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Conference Schedule

Date	Time	Conference Program	
2021-10-29	09:00-21:00	Registration at Lijiang Snowy Sands Resort	
2021-10-30	08:00-12:00	Registration at Lijiang Snowy Sands Resort	
	09:00-09:15	Welcome Speech (Norio Shiratori)	
	09:15-09:30	Opening Remarks (Jinfu Qian)	
	09:30-09:50	Group Photo Taken	
	09:50-10:40	Keynote Speech 1 (Prof. Deke Guo)	
	10:40-11:10	Coffee break	
	11:10-12:00	Keynote Speech 2 (Prof. Meiqin Wang)	
	14:00-14:50	Keynote Speech 3 (Prof. Tarik Taleb)	
	14:50-15:30	Coffee break	
	15:30-17:50	Session A1(Room 1)	Session B1(Room 2)
2021-10-31	09:00-10:15	Session A2 (Room 1)	Session B2 (Room 2)
	10:15-10:35	Coffee break	
	10:35-11:55	Session A3(Room 1)	Session B3 (Room 2)
	14:00-15:30	Session A4(Room 1)	Session B4 (Room 2)
	15:30-16:00	Coffee break	
	16:00-17:45	Session A5(Room 1)	Session B5 (Room 2)
2021-11-1	09:00-10:30	Session A6(Room 1)	Session B6 (Room 2)
	10:30-10:50	Coffee break	
	10:50-12:05	Session A7(Room 1)	Session B7 (Room 2)
	14:00-15:30	Session A8(Room 1)	Session B8 (Room 2)
	15:30-16:00	Closing Remarks	
	16:00-16:30	Free discussion	
	16:30-17:00	TPC Meeting	

Opening Remarks and Keynotes in Wenyuan Building 201, Room 1 & Room 2 are the second meeting room and the third meeting room of the administration building, Lijiang Culture and Tourism College.

Greeting Message from General Conference Chairs

It is our pleasure to welcome you all to the 2021 International Conference on Networking and Network Applications (NaNA2021) in Lijiang, 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 Lijiang will offer you all irresistible attractions.

The NaNA2021 is technically sponsored by Lijiang Culture and Tourism College, China, Xidian University, China, Future University Hakodate, Japan, Science and Technology on Communication Information Security Control, China, Chuzhou University, China and Wakkanai Hokusei Gakuen 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, Wired Networks and Data Center (DC) Networks, Network Management, Monitoring and Automation, and Network Applications. 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.

NaNA2021 General Co-Chairs
Zhenjiang Wang, Lijiang Culture and Tourism College, China
Naijie Gu, University of Science and Technology of China, China
Pin-Han Ho, University of Waterloo, Canada
Shunyang Chen, Science and Technology on Communication Information Security Control Laboratory, China
October 30, 2021

Committees

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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

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
Yue Zhao, China Electronics Technology Cyber Security Co., LTD, China
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

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Keynote Speech 1:

Edge Federation: A new Computation Paradigm

Prof. Deke Guo
National University of Defense Technology, China

Abstract: Edge Computing is regarded as a new promising paradigm that break through the inherent limits of current cloud computing. It can not only improve the service capacity and application range for the entire network, but also reduce the response delay of services, and improve the execution performance of various big data applications; hence it has its value in both theoretical and practical perspectives. This keynote will discuss the development of representative computation paradigms, including client/server, P2P, cloud computing, and edge computing, and focus on three kind of edge computing paradigms. Then, this keynote will present the design of edge federation framework, hybrid edge computing framework, and mobile-assisted edge computing framework.

CV: Prof. Deke Guo received his B.E. degree from Beijing University of Aeronautic and Astronautic, China, and his Ph.D. degree in School from National University of Defense Technology, China. He is currently a Professor with the College of System Engineering, National University of Defense Technology. His research interests include distributed systems, software-defined networking, data center networking, wireless and mobile systems, and interconnection networks. He is a senior member of the IEEE and a member of the ACM. His research achievements have been integrated in the open-source Hadoop system. He has published more than 200 papers, including 56 papers that have been published by ACM/IEEE transactions journals, such as TON, TOC, TKDE, TPDS, TMC. Addtionally, three papers have been accepted as the Best Paper Award in international conferences, including the IEEE ICNP 2019. He has 50 and 5 first-authored invention patents in China and the United States, respectively. He published 2 books (1st author). In 2020, he has been elected as the CCF-IEEE CS young computer scientist.

Keynote Speech 2:

Novel Cryptanalysis and Design of Symmetric Ciphers

Prof. Meiqin Wang
Shandong University, China

Abstract: As the cornerstone to assure cybersecurity, the cipher plays a critical role in the security authentication and encipherment protection. With the advantage of high efficiency, the symmetric-key encryption scheme has a broader and more flexible application comparing to the public-key encryption scheme. This talk is focus on the design and cryptanalysis of symmetric ciphers. On the aspect of automatic cryptanalysis, we manage to depict the problems in cryptography from the view of operational research and algebraic theory. A series of automatic models regarding different kinds of attack methods are constructed, which become valuable universal analytical tools in the international cryptology field. These new models are integrated into the platform of automatic cryptanalysis, which can efficiently accomplish the tasks in cryptanalysis and plays a crucial part in the design of innovative ciphers. The design and cryptanalysis of ciphers are two complementary sides and bring out the best in each other. Thus, the update of cryptanalytic methods also promotes the development of design techniques. We transform powerful analytical methods into ingenious design techniques and design several novel symmetric ciphers.

CV: Prof. Meiqin Wang takes charge of Executive Vice-President of School of Cyber Science and Technology, Shandong University and Vice-Director of Key Laboratory of Cryptologic Technology and Information Security, Ministry of Education, Shandong University. Supported by the 973 Program, National Natural Science Foundation of China, and Chinese Major Program of National Cryptography Development Foundation, she mainly studies cryptanalysis and design methods of the symmetric cipher. In recent years, she has published more than 70 papers in top conferences and journals of cryptography.

Keynote Speech 3:

6G -The Journey Towards a New Breeze of Cloud-Native Mobile Networking

Prof. Tarik Taleb
Aalto University, Finland

Abstract: The architectures of mobile networks have seen an unprecedented techno-economic transformation, fusing the telco world within the cloud world, adding the spices of Software Engineering to the overall system design, and ultimately yielding the concept of Telco Cloud. This has brought significant benefits in terms of reducing expenditure and operational costs, flexibility in deployment, and faster time to market. The key enablers are Network Function Virtualization, Software-Defined Networking, and Edge/Cloud Computing. Artificial Intelligence is also kicking in this arena. When all these technologies are well integrated, the creation and lifecycle management of fully programmable, flexible, service-tailored, and automated end-to-end network slices become possible. This will support diverse 5G and beyond 5G services, spanning from Tactile IoT to Pervasive Robotics and Immersive Services.

This talk will showcase how the architectures of different generations of mobile networks have evolved. It will also show the journey that 6G will be likely taking towards enabling a new breeze of cloud-native mobile networking; whereby the old-fashioned concept of "network of networks" would be simply replaced by a new vision of "service of services."

CV: Prof. Tarik Taleb is Professor at the School of Electrical Engineering, Aalto University, Finland. He is the founder and director of the MOSA!C Lab (www.mosaic-lab.org). He is also Professor at the Center of Wireless Communications, University of Oulu, Finland. Prior to his current positions, he was working as Senior Researcher and 3GPP Standards Expert at NEC Europe Ltd, Heidelberg, Germany. Before joining NEC and till Mar. 2009, he worked as assistant professor at the Graduate School of Information Sciences, Tohoku University, Japan, in a lab fully funded by KDDI, the second largest mobile operator in Japan. From Oct. 2005 till Mar. 2006, he worked as a research

fellow at the Intelligent Cosmos Research Institute, Sendai, Japan. He received his B. E degree in Information Engineering with distinction, M.Sc. and Ph.D. degrees in Information Sciences from Tohoku Univ., in 2001, 2003, and 2005, respectively.

Prof. Taleb's research interests lie in the field of network softwarization & slicing, mobile cloud networking, network function virtualization, software defined networking, mobile multimedia streaming, and cloud computing. He served as the general chair of the 2019 edition of the IEEE Wireless Communications and Networking Conference (WCNC'19) held in Marrakech, Morocco. He was the guest editor in chief of the IEEE JSAC Series on Network Softwarization & Enablers. He is/was on the editorial board of the IEEE Transactions on Wireless Communications, IEEE Wireless Communications Magazine, IEEE Journal on Internet of Things, IEEE Transactions on Vehicular Technology, IEEE Communications Surveys & Tutorials, and a number of Wiley journals. Till Dec. 2016, he served as chair of the Wireless Communications Technical Committee, the largest in IEEE ComSoc. He also served as Vice Chair of the Satellite and Space Communications Technical Committee of IEEE ComSoc (2006 - 2010).

Prof. Taleb is the recipient of the 2017 IEEE ComSoc Communications Software Technical Achievement Award (Dec. 2017) for his outstanding contributions to network softwarization. He is also the (co-) recipient of the 2017 IEEE Communications Society Fred W. Ellersick Prize (May 2017), the 2009 IEEE ComSoc Asia-Pacific Best Young Researcher award (Jun. 2009), the 2008 TELECOM System Technology Award from the Telecommunications Advancement Foundation (Mar. 2008), the 2007 Funai Foundation Science Promotion Award (Apr. 2007), the 2006 IEEE Computer Society Japan Chapter Young Author Award (Dec. 2006), the Niwa Yasujirou Memorial Award (Feb. 2005), and the Young Researcher's Encouragement Award from the Japan chapter of the IEEE Vehicular Technology Society (VTS) (Oct. 2003). Some of Prof. Taleb's research work have been also awarded best paper awards at prestigious IEEE-flagged conferences.

Opening Remarks and Keynotes

2021-10-30 9:00-12:00、14:00-14:50(Wenyuan Building 201)			
Time	**Conference Program**	**Spokesman**	**Chairman**
09:00-09:15	Welcome Speech	Norio Shiratori	Haiping Duan
09:15-09:30	Opening Remarks	Jinfu Qian	Haiping Duan
09:30-09:50	Group Photo Taken		Xin Wang
09:50-10:40	Keynote Speech 1	Deke Guo	Naijie Gu
10:40-11:10	**Coffee Break**		
11:10-12:00	Keynote Speech 2	Meiqin Wang	Lisheng Ma
14:00-14:50	Keynote Speech 3	Tarik Taleb	Xiaohong Jiang

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

Time	Conference Theme	Conference ID	Conference Password
2021.10.30-2021.10.30 09:00-14:50	**Opening Remarks and Keynote Speech**	58813372994	2021
2021.10.30-2021.11.1 09:00-18:00	**SessionA1-A8**	58813372994	2021
2021.10.30-2021.11.1 09:00-18:00	**SessionB1-B8**	60188642795	2021

Track 1:Wireless Networks

2021-10-30 15:30-17:50 Room 1				
Session A1 Chair: Bin Yang				
ID	**Time**	**Author**	**Title**	**Type**
5	15:30-15:50	Wendi Sun, Xiaoying Liu, Kechen Zheng, Yang Xu and Jia Liu	Spectrum Utilization Improvement for Multi-Channel Cognitive Radio Networks with Energy Harvesting	Long
42	15:50-16:10	Yuanyu Zhang, Ji He, Qianyue Qu and Zhiwei Zhang	Wiretapping or Jamming: On Eavesdropper Attacking Strategy in mmWave Ad Hoc Networks	Long
106	16:10-16:30	Ranran Sun, Bin Yang and Shenghui Zhao	Covert Communication in D2D Underlaying Cellular Network	Long
87	16:30-16:50	Wentao Du, Xinyu Ma, Wenxiang Dong, Dong Zhang, Chi Zhang and Qibin Sun	Calibrating Privacy Budgets for Locally Private Graph Neural Networks	Long
19	16:50-17:05	Yangyang Liu, Pinchang Zhang and Xufei Li	Physical Layer Authentication Utilizing Channel State Information in MmWave MIMO Systems	Short
43	17:05-17:20	Yanwen Liu, Wei Su and Lizhuang Tan	Tetris: Near-optimal Scheduling for Multi-path Deadline-aware Transport Protocol	Short
28	17:20-17:35	Xufei Li, Shuiguang Zeng and Yangyang Liu	Covert Authentication at the Physical Layer	Short
29	17:35-17:50	Shiyi Zou, Lingge Jiang, Pingping Ji, Chen He, Di He and Guorong Zhang	Beam Selection Algorithm for Beamspace HAP-MIMO Systems Based on Statistical CSI	Short

2021-10-30 15:30-17:45 Room 2				
Session B1 Chair: Wu Wang				
ID	**Time**	**Author**	**Title**	**Type**
47	15:30-15:45	Ze Yang and Youliang Tian	Towards Attack and Defense Views to (t, n)-threshold Secret Sharing Scheme Using Information Theory	Short
132	15:45-16:00	Muhammad Fawad Khan and Limei Peng	Energy-efficient UAV Trajectory Planning Based on Flexible Data Rate	Short
85	16:00-16:15	He Zhu, Huihui Wu and Xiaohong Jiang	Covert MIMO Communication in Two-hop Relay Systems	Short
88	16:15-16:30	Cheng Zhang, Xuening Liao, Zhengqiang Wu and Guoyong Qiu	Buffer-Aided Relay Selection for Wireless Cooperative Relay Networks with Untrusted Relays	Short
86	16:30-16:45	Wang Hui, Han Yani, Yang Shaojing, Song Anxiao and Zhang Tao	Privacy-Preserving Federated Generative Adversarial Network for IoT	Short
50	16:45-17:00	Mubarak Umar, Xuening Liao and Jiawang Chen	Improved Anonymous Hybrid Authentication Scheme for Body Area Network Utilizing Channel Characteristics	Short
107	17:00-17:15	Yu He, Youliang Tian and Hua Xu	Random Verifiable Multi-Server Searchable Encryption Scheme	Short
111	17:15-17:30	Dalia Nashat and Sahar Kahiry	Detecting Http Flooding Attacks Based on Uniform Model	Short
115	17:30-17:45	Chen Yang, Zhen Jia and Shundong Li	Privacy-Preserving Proximity Detection Framework for Location-Based Services	Short

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

2021-10-31 9:00-10:15 Room 1				
Session A2 Chair: Pinchang Zhang				
ID	**Time**	**Author**	**Title**	**Type**
125	09:00-09:15	Alibek Nurgaliyev and Hua Wang	Comparative Study of Symmetric Cryptographic Algorithms	Short
127	09:15-09:30	Tianyi Liang and Huijie Zhu	Research on PDCCH Channel in 5G NR System	Short
130	09:30-09:45	Ahmed Salem, Huihui Wu and Xiaohong Jiang	Exact Evaluation of Total Variation Distance in Covert Communications	Short
6	09:45-10:00	Jiahui Sun, Ningchun Liu, Shuai Gao and Wei Su	A Secure Identifier-to-Locator Mapping Mechanism in Smart Identifier Network	Short
20	10:00-10:15	Yuanhang He, Lei Chen, Yi Ni, Yuyao Wang, Jiangtao Li and Yufeng Li	Privacy Protection Scheme for Edge Computing Based on Function Encryption	Short
Coffee Break				
2021-10-31 10:35-11:55 Room 1				
Session A3 Chair: Xuening Liao				
ID	**Time**	**Author**	**Title**	**Type**
18	10:35-10:55	Jingping She, Ne Wang, Ruiting Zhou and Chen Tian	Online Scheduling of Machine Learning Jobs in Edge-Cloud Networks	Long
46	10:55-11:10	Zhonghua Xie, Tao Tao and Lisheng Ma	Emergency Virtual Machine Online Migration in Cloud Data Centers	Short
63	11:10-11:25	Ran Pang, Hui Li, Yuefeng Ji, Guangquan Wang and Chang Cao	Energy-saving Mechanism based on Tidal Characteristic in Computing Power Network	Short
96	11:25-11:40	Yichuan Wang, He Wang, Xinhong Hei, Wenjiang Ji and Lei Zhu	Petri Net Modeling and Vulnerability Analysis of the Heartbleed	Short
100	11:40-11:55	Guiling Zhang, Yaling Zhang, Yichuan Wang, Lei Zhu and Wenjiang Ji	A Fine-Grained Petri Model for SQL Time-Blind Injection	Short

Track 3: Network Management, Monitoring, and Automation

2021-10-31 9:00-10:10 Room 2				
Session B2 Chair: Xiaolan Liu				
ID	**Time**	**Author**	**Title**	**Type**
27	09:00-09:20	Zichen Feng, Changqiao Xu, Han Xiao, Yongpu Jia, Zhongyi Ding and Zhaoyang Liu	Dynamic Overhead Queue-based Efficient Service Delivery at Edge for Adaptive Live Streaming	Long
44	09:20-09:40	Gaofeng Hong, Qili Wen and Wei Su	A Modified Vehicular Handover Scheme in Non-standalone 5G Networks With the Assistance of	Long
14	09:40-9:55	Pin Chen and Naijie Gu	A Game Theory Perspective on IP Routing Protocols Evaluation	Short
15	9:55-10:10	Yuxiang Chen, Yao Hao, Kaijun Wu, Zhongqiang Yi, Haiyang Peng and Sijie Liao	Research on Data Security of Unmanned Aerial Vehicles	Short
Coffee Break				
2021-10-31 10:35-11:50 Room 2				
Session B3 Chair: Yue Zhao				
25	10:35-10:50	Zhongyi Ding, Shujie Yang, Zhaoyang Liu, Tengchao Ma, Zichen Feng and Mingze Wang	CD-SR: A Real-time Anomaly Detection Framework for Continuous Concept Drift	Short
26	10:50-11:05	Guozhu Zhao, Pinchang Zhang and Lisheng Ma	On the Applicability of Multi-Characteristics for the Continuous Authentication in IIoT	Short
21	11:05-11:20	Jiaqing Bai, Ji He, Xiaohong Jiang and Lijun Chen	Performance Analysis for Dual-Hop Covert Communication System with Outdated CSI	Short
60	11:20-11:35	Yue Zhao, Yarang Yang, Yiru Niu, Dongyu Yang, Bo Tian, Yao Hao and Kaijun Wu	The Cooperative Authentication Mechanism and Performance Evaluation for Unmanned Systems	Short
65	11:35-11:50	Yanchun Kong, Weibin Su and Gang Xu	Monitoring System of Carbon Neutralization Forestland in Plateau Based on Edge Computing	Short

2021-10-31 14:00-15:30 Room 1				
Session A4 Chair: Bo Tian				
ID	**Time**	**Author**	**Title**	**Type**
66	14:00-14:15	Mingbo Pan, Weibin Su and Yikai Wang	Review of Research on the Curriculum for Artificial Intelligence and Industrial Automation based on Edge Computing	Short
91	14:15-14:30	Yanxia Tan, Yong Zhang, Yanlei Zheng, Yacheng Liu, Guangquan Wang and Yuefeng Ji	Experimental Demonstration of End-to-End Service Orchestration Architecture based on Northbound API	Short
92	14:30-14:45	Zhi Qiao, Bo Liu, Bo Tian and Yu Liu	Heterogeneous Network Embedding With Enhanced Event Awareness Via Triplet Network	Short
94	14:45-15:00	Xin Song, Yichuan Wang, Lei Zhu, Wenjiang Ji, Yanning Du and Feixiong Hu	A Method for Fast Outlier Detection in High Dimensional Database Log	Short
108	15:00-15:15	Liumei Zhang, Xi Deng and Yichuan Wang	Shellshock Bash Vulnerability Modeling Analysis Based on Petri Net	Short
120	15:15-15:30	Wu Wang ,Yuejuan Liu and Shikai Shen	Transmission Characteristics of Photonic Crystal Fiber Filled with Magnetic Fluid	Short
Coffee Break				
2021-10-31 16:00-17:45 Room 1				
Session A5 Chair: Yang Xu				
1	16:00-16:15	Aiguo Wang, Yue Meng, Jinjun Liu, Shenghui Zhao and Guilin Chen	Multi-domain Feature Extraction for Human Activity Recognition Using Wearable Sensors	Short
3	16:15-16:30	Hong Xia, Jianguo Li, Yanping Chen, Ning Lv, Zhongmin Wang and Qingyi Dong	CLSDRL:A Routing Optimization Method for Traffic Feature Extraction	Short
9	16:30-16:45	Yusuke Noda and Bishnu P. Gautam	A Proposal of Large Scale Network Route Optimization Technique Based on Genetic Algorithm	Short
10	16:45-17:00	Chao Qi and Junjie Lu	Fatigue Detection Technology for Online Learning	Short
11	17:00-17:15	Xu an Wang, Yunxuan Su and Jindan Zhang	Cryptanalysis of Double-trapdoor Hash Function and Multi-Trapdoor Hash Function Schemes	Short
13	17:15-17:30	Sugang Ma, Zixian Zhang, Lei Zhang, Yanping Chen, Xiaobao Yang, Lei Pu and Zhiqiang Hou	Dual Attention Mechanism Object Tracking Algorithm Based on Fully-Convolutional Siamese Network	Short
33	17:30-17:45	Guorong Zhang, Lingge Jiang, Pingping Ji, Chen He, Di He and Shiyi Zou	A Modified K-means User Grouping Design for HAP Massive MIMO Systems	Short

Track 4: Network Applications

2021-10-31 14:00-15:30 Room 2				
Session B4 Chair: Kaijun Wu				
ID	**Time**	**Author**	**Title**	**Type**
7	14:00-14:20	Fang Ren, Mingyu Yu, Haiyan Xiu and Wei Hou	A New Symmetric Information Hiding Scheme Based on Cover Randomness	Long
41	14:20-14:40	Wangwang Wang, Yunchun Zhang, Chengjie Li, Xuchengming Sun, Yuting Zhong and Xin Zhang	Network Traffic Oriented Malware Detection in IoT (Internet-of-Things)	Long
103	14:40-15:00	Junpeng Zhang, Mengqian Li, Shuiguang Zeng, Bin Xie and Dongmei Zhao	A Survey on Security and Privacy Threats to Federated Learning	Long
45	15:00-15:15	Kaijun Wu, Wanli Dong, Yunfei Cao, Xue Wang and Qi Zhao	An Improved Method of Median Filtering Forensics for Enhanced Image Security Detection	Short
48	15:15-15:30	Qingyi Ye, Tingting Zhao, Guo Sun and Xia Feng	A Recommendation Scheme with Reputation-Based Incentive Mechanism on Consortium Blockchain	Short
Coffee Break				
2021-10-31 16:00-17:15 Room 2				
Session B5 Chair: Hafsa Kabir				
17	16:00-16:15	Yuanqing Liu, Ning Xi and Yongbo Zhi	NLEU: A Semantic-based Taint Analysis for Vetting Apps in Android	Short
22	16:15-16:30	Jianxin Ji, Chunli Xia, Tong Zhang, Yichuan Wang and Sheng Liu	Research on A Vulnerability Detection Technology for Network Topology Security	Short
32	16:30-16:45	Zhang Lin	Network Intrusion Detection based of Semi-Supervised Ensemble Learning Algorithm for Imbalanced Data	Short
35	16:45-17:00	Xiaoguo Lin, Pujie Jing, Chuntang Yu and Xia Feng	TPLI:A Traceable Privacy-preserving Logistics Information Scheme via Blockchain	Short
39	17:00-17:15	Chong Chen and Ping Zou	Network Application Vulnerability Detection Based on Fuzzing Technology	Short

2021-11-1 9:00-10:30 Room 1				
Session A6 Chair: Muhammad Bello Ahmad				
ID	**Time**	**Author**	**Title**	**Type**
49	09:00-09:15	Dongyu Yang, Yue Zhao, Kaijun Wu, Xiaoyu Guo and Haiyang Peng	An Efficient Authentication Scheme Based on Zero Trust for UAV Swarm	Short
55	09:15-09:30	Xue Wang, Hao Zhang and Kaijun Wu	Expression Tree-based Policy Conflict Detection Algorithm	Short
57	09:30-09:45	Xiaoteng Yang, Wenbo Zhang, Bo Liu and Hong Su	On the Robustness of Complex System With Percolation Theory Under Node Attack	Short
59	09:45-10:00	Mengqian Li, Youliang Tian, Junpeng Zhang, Dandan Fan and Dongmei Zhao	The Trade-off Between Privacy and Utility in Local Differential Privacy	Short
61	10:00-10:15	Yachen He, Guishan Dong, Dong Liu, Haiyang Peng and Yuxiang Chen	Access Control Scheme Supporting Attribute Revocation in Cloud Computing	Short
64	10:15-10:30	Rui Li and Zilan Yang	The Nearest Neighbor Algorithm for Balanced and Connected k-Center Problem Under Modular Distance	Short
Coffee Break				
2021-11-1 10:50-12:05 Room 1				
Session A7 Chair: Shikai Shen				
68	10:50-11:05	Yu Zheng, Zhao Huang, Liang Li, Changjian Xie, Quan Wang and Zili Wu	Implementation and Analysis of Hybrid DRAM PUFs on FPGA	Short
69	11:05-11:20	Sisong Ru, Bingbing Zhang, Yixin Jie, Chi Zhang, Lingbo Wei and Chengjie Gu	Graph Neural Networks for Privacy-Preserving Recommendation with Secure Hardware	Short
70	11:20-11:35	Yue He, Hui Li,Yiming Li, Qiang Wu, Yuefeng Ji, Rentao Gu	Exploration of Simulation Teaching Mode for Intelligent Information Network Course	Short
75	11:35-11:50	Zhihui Wang, Jianrui Chen, Peijie Wang and Tingting Zhu	Dyn-GCN: Graph Embedding via Dynamic Evolution and Graph Convolutional Network for Personal Recommendation	Short
81	11:50-12:05	Zhihao Xu, Kezhang Lin, Zhiwei Zhang, Wangzhe Xu, Kui Liu, Bin Wang, Xinghui Zhu and Jiadong Chen	You Can See, But You Cannot Photograph: An Intelligent Content Protection Scheme for Videos on Screens	Short

2021-11-1 9:00-10:30 Room 2				
Session B6 Chair: Guilin Chen				
ID	**Time**	**Author**	**Title**	**Type**
82	09:00-09:15	Xiaoyan Zhu, Yu Zhang, Lei Zhu, Xinhong Hei,Yichuan Wang, Feixiong Hu and Yanni Yao	Chinese Named Entity Recognition Method for the Field of Network Security Based on RoBERTa	Short
122	09:15-09:30	Pin-Han Ho and Yan Jiao	Design of Binocular Stereo Vision System Via CNN-based Stereo Matching Algorithm	Short
131	09:30-09:45	Chun-Jen Lin, Yan Luo and Liang-Min Wang	Heterogeneous Flow Scheduling Using Deep Reinforcement Learning in Partially Observable NFV Environment	Short
93	09:45-10:00	Xiangyi Lu, Qing Ren and Feng Tian	A Fine-tuning-based Adversarial Network for Member Privacy Preserving	Short
99	10:00-10:15	Yaling Zhang, Hongyun Wang, Yichuan Wang, Wenjiang Ji and Lei Zhu	Signature Scheme Based on The SM2 Algorithm in Fabric	Short
118	10:15-10:30	Bishnu Prasad Gautam, Yubaraj Gautam, Kazuhiko Sato and Norio Shiratori	Novel Firewall Application for Mitigating Flooding Attacks on an SDN Network	Short
Coffee Break				
2021-11-1 10:50-12:05 Room 2				
Session B7 Chair: Yuanyu Zhang				
123	10:50-11:05	Ke Zhao and Limei Peng	UAV Deployment with Flexible Height Under SINR Constraint	Short
105	11:05-11:20	Tianci Zhou, Yong Zeng, Yixin Li, Zhongyuan Jiang, Zhihong Liu and Teng Li	Cold-start Recommendation Method Based on Homomorphic Encryption	Short
113	11:20-11:35	Lingling An, Zhuo Wang, Jiahao Yue and Xiaoliang Ma	Joint Task Offloading and Resource Allocation via Proximal Policy Optimization for Mobile Edge Computing Network	Short
116	11:35-11:50	Cuicui Niu, Zhengzhi Pan,Wuchao Shi and Hai Liu	Network Construction Using Overlapping Histogram Under Local Differential Privacy	Short
102	11:50-12:05	Kenan Qin,Yihui Zhou, Bo Tian and Rui Wang	AttentionAE: Autoencoder for Anomaly Detection in Attributed Networks	Short

2021-11-1 14:00-15:30 Room 1				
Session A8 Chair: Shenghui Zhao				
ID	**Time**	**Author**	**Title**	**Type**
119	14:00-14:15	You Wu, Xin-feng Dong, Jinbo Wang and Wenzheng Zhang	Construction of MDS Matrices Based on the Primitive Elements of the Finite Field	Short
121	14:15-14:30	Ruiyang Qin, Bowen Deng, Lele Zheng and Xutong Mu	Privacy-Preserving and Efficient Range Counting in IoT Networks	Short
83	14:30-14:45	Lei Zhu, Ziheng Zhang, Xinhong Hei, Yichuan Wang, Ziliang Yang, Feixiong Hu, and Ping He	A Permission Generation and Configuration Method Based on Rules and FP-Growth Algorithm	Short
104	14:45-15:00	Yongchao Dang, Chafika Benzaid, Bin Yang and Tarik Taleb	Deep Learning for GPS Spoofing Detection in Cellular-Enabled UAV Systems	Short
2021-11-1 14:00-15:30 Room 2				
Session B8 Chair: Mubarak Umar				
124	14:00-14:15	Mingyi You, Binhua Shi, Yunxia Ye and Kai Huang	Characterizing and Improving the Probability of Correct Phase Ambiguity Resolution for Uniform Circular Array Phase Interferometers	Short
97	14:15-14:30	Xinhong Hei, Hao Zhang, Wenjiang Ji, Yichuan Wang, Lei Zhu and Yuan Qiu	ConvCatb: An Attention-based CNN-CATBOOST Risk Prediction Model for Driving Safety	Short
98	14:30-14:45	Wenjiang Ji, Jiangcheng Yang, Yichuan Wang, Lei Zhu, Yuan Qiu and Xinhong Hei	A Driving Risk Prediction Approach Based on Generative Adversarial Networks and VANET for Autonomous Trams	Short
135	14:45-15:00	Rui Zhi Zhai, De Shun Yin, Li-Li Yuan, Jian Ping Wang and Ziheng Shangguan	Wet Aggregate Stability Predicting of Soil in Multiple Land-Uses Based on Support Vector Machine	Short

Contact Us

Publication and Registration Co-Chairs:

Xuanwen Hao

Xinlei Wang

Email: nanaconference@126.com

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