

ANNUAL REPORT 2022

Computer Networks Group
Institute of Computer Science
Faculty of Mathematics and Computer Science
Georg-August-Universität Göttingen

COMPUTER NETWORKS GROUP
GOLDSCHMIDTSTRASSE 7, 37077 GÖTTINGEN, GERMANY
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December 2022
Editor: Prof. Dr. Xiaoming Fu

ANNUAL REPORT 2022

Computer Networks Group

Introduction

Founded in April 2007, the Computer Networks Group is devoted to cutting-edge leading research and education programs in the field of network architectures, protocols and applications. This report series intends to review the most relevant and important research results and other achievements and activities performed by the Computer Networks Group. The present report summarizes those of the year of 2022.

Despite the coronavirus pandemic, things went better and better in 2022 compared to last year: most of our teaching and research activities resumed to be physically onsite; many research visits, project meetings and conference attendance started to recover. We look forward to a brighter and more prosperous new year in 2023 with the projected ending of COVID-19 pandemic and social changes. Stay safe and healthy!

Group Members

Mr. Yanlong Huang and Ms. Wanghong Yang joined the NET group as PhD students in December 2022. Dr. Bangbang Ren and Dr. Weijun Wang completed his PhD theses in 2022. Pablo Gutierrez-Marques discontinued his PhD study due to personal reasons.

Several master and bachelor student assistants worked on various projects and thesis work; they are an important part of the team.

By the end of year 2022, the research group comprises 1 professor, 2 senior researchers/postdoc fellows, 5 PhD students, as well as a couple of master and bachelor students. See Table 1 for detailed information.

Table 1: Member of Computer Networks Group (as of 31.12.2022):

Admin staff	Head	Postdocs	PhD researchers	Adjunct researchers/lecturers
Secretary: Tina Bockler System administrator: Gunnar Krull	Prof. Dr. Xiaoming Fu	Dr. Tingting Yuan Dr. Weijun Wang	Yunxiao Zhang, Fabian Wölk, Zhengze Li, Yanlong Huang, Wanghong Yang	Prof. Dr. Xu Chen (SYSU), Assoc. Prof. Dr. Yang Chen (Fudan), Prof. Dr. Noel Crespi (Telecom SudParis), Assoc. Prof. Dr. Hong Huang (HUST), Assist. Prof. Dr. Lei Jiao (Oregon), Assoc. Prof. Dr. Sameer Kulkarni (IIT), Prof. Dr. Wenzhong Li (Nanjing), Prof. Dr. Jar-Der Luo (Tsinghua), Assoc. Prof. Dr. Lingjun Pu (Nankai), Dr. Hannes Tschofenig (ARM), Assist. Prof. Dr. Shuai Xu (NUAA), Assoc. Prof. Dr. Yali Yuan (SEU)

Teaching and Supervision

During 2022 the Group has provided the following courses:

Lectures:

Computer Networks, 4 ECTS

Advanced Computer Networks, 5 ECTS

Computer Networks, 4 ECTS (exam only)

NOTE: WS – Winter Semester, SS – Summer Semester

WS2021/22, WS2022/23

SS2022

SS2022

Exercise classes:

Computer Networks

WS2021/22, WS2022/23

Lab courses:

Practicum Networking Lab, 6 ECTS

SS2022, WS2022/23

Data Science for Smart Cities (in cooperation with City Göttingen), 6 ECTS

SS2022, WS2022/23

Seminars:

Adv. Topics in Mobile and Social Communications, 6 ECTS

WS2022/23

Adv. Topics in Computer Networking, 6 ECTS

SS2022

Internet Technologies, 4 ECTS

SS2022, WS2022/23

Research Areas and Projects

The Computer Networks group is committed to explore innovative networking technologies and utilize its full potential, knowledge and experience in the analysis, design, and evaluation of emerging and future network technologies, systems, and applications. Its current main research areas include:

- Architectures, protocols, mechanisms and applications for cloud computing and data centers, including resource and service management, energy efficiency, data delivery, software-defined networks, network function virtualization, cloud systems, applications and services. This has been conducted in collaboration with Microsoft Research, Deutsche Telekom, Nokia Bell Labs, Huawei, Cisco, Ericsson, NEC, UC Riverside, U. Oregon, Sorbonne University, Cnam, Ghent University, BUPT, Fudan University, Tsinghua University, and Nanjing University etc.
- Future Internet architectures and protocols, including information-centric networking, software-defined networking, reliability and congestion control, pub/sub architecture, disaster management, measurement, and related security mechanisms for supporting large-scale content delivery and other applications over the Internet. This area has been in collaboration with UC Riverside, UCLA, Columbia University, University College London, University of Rome “Tor Vergata”, Swedish Institute of Computer Science, KDDI, Panasonic, Cisco, Ericsson, Huawei, NEC, Bell Labs, Osaka University, University of Tokyo, Waseda University, NICT, Fudan University, Tsinghua University, and Nanjing University, etc.
- Social networks/social computing, including socio-aware networking/computing infrastructure, mobile social networks, as well as social behavior studies and social influence, in collaboration with researchers from Göttingen (including sociologists, socio-psychologists, economist, physicists and epidemiologists), nationally (MPI-DS, MPI-SWS, L3S/University of Hannover, University of Frankfurt) and internationally (University of Oregon, University of Chicago, University of Cambridge, Bell Labs, Tsinghua University, Beijing Foreign Studies University, Fudan University, Nanjing University, University of Science and Technology of China, Huazhong University of Science and Technology, China Telecom, Tectent, TAL Education Group, etc).

- Mobile computing, pervasive/social sensing and applications e.g., in smart cities, smart mobility/transport scenarios and disaster management, leveraging machine learning (in particular compressive sensing, LSTM, DRL, transfer learning and prototype learning) and data mining techniques where appropriate, in cooperation with Fortiss, Inova DE, Bernard Technologies, Continental AG (Germany), Aalto University, University of Helsinki (Finland), Uppsala University (Sweden), UCL, University of Aston, University of Essex, University of Kent, Ranplan Ltd (UK), IMT Telecom-SudParis, Cisco (France), Hong Kong University of Science and Technology, Tsinghua University, Nankai University, Nanjing University, University of Science and Technology of China (China), NEC, Toyota, National Institute of Informatics (Japan), as well as Chair of Information Management, Chair of Human Resource Management, and Institute of Geography at the University of Göttingen, University Medical Center Göttingen, City Göttingen, German Space Agency (DLR), Wolfsburg AG, Birmingham City Council.

Some funded projects include:

- COSAFE – “Cooperative Connected Intelligent Vehicles for Safe and Efficient Road Transport”, sponsored by EU H2020 MCSA-RISE program (Nov 2018- Oct 2023)
- CODECO – Cognitive Decentralised Edge Cloud Orchestration, sponsored by EU Horizon Europe RIA program (Jan 2023-Dec 2025)
- COVER – Cooperative and Intelligent Unmanned Aerial Vehicles for Emergency Response Applications, sponsored by EU Horizon Europe MCSA-SE program (Jan 2023-Dec 2026)
- KG-Health – Multimodal Knowledge Graph System for Structural Health Monitoring, sponsored by DAAD PPP Australia program (Jan 2023-Dec 2024)
- IGL-Stance – “Stance Analysis towards COVID-19 Vaccine Uptake via Interaction Graph Learning”, sponsored by DAAD PPP-RGC Hong Kong program (Jan 2023-Dec 2024)
- “Privacy Protection for Multi-Agent Deep Reinforcement Learning”, sponsored by Humboldt Foundation (Dec 2021-Nov 2022)
- Gift funding on “Future Networks”, sponsored by Huawei Technologies
- “Socioeconomic Big Data”, sponsored by CSC Scholarship program
- “High-performance transport protocol over 6G”, sponsored by CSC Scholarship program

Publications, Technical Reports and Theses

Editorials

1. Zhi Zhou, Xiaoweng Gong, Dusit Niyato, Walid Saad, Zehui Xiong, Xiaoming Fu, Guest Editorial for Special Issue on The Nexus Between Edge Computing and AI for 6G Networks, **IEEE Transactions on Network Science and Engineering**, 2022
2. James Evans, Xiaoming Fu, Jar-Der Luo, Message from Editors-in-Chief, **Journal of Social Computing**, 3(4): i-ii, Dec 2022.
3. James Evans, Xiaoming Fu, Jar-Der Luo, Message from Editors-in-Chief, **Journal of Social Computing**, 3(3): i-ii, Sept 2022.
4. James Evans, Xiaoming Fu, Jar-Der Luo, Message from Editors-in-Chief, **Journal of Social Computing**, 3(2): i-ii, June 2022.

Books, Book Chapters

5. Song Yang, Nan He, Fan Li, and Xiaoming Fu, "Resource Allocation in Network Function Virtualization: Problems, Models and Algorithms", Singapore: Springer, Sept 2022.

Papers in Peer-Reviewed Journals

6. Shuai Xu, Xiaoming Fu, Dechang Pi, Zhuo Ma, Inferring Individual Human Mobility from Sparse Check-in Data: A Temporal-Context-Aware Approach, **IEEE Transactions on Computational Social Systems** (accepted), Dec 2022.
7. Song Yang, Fan Li, Zhi Zhou, Xu Chen, Yu Wang, Xiaoming Fu, Online Control of Service Function Chainings Across Geo-Distributed Datacenters, **IEEE Transactions on Mobile Computing** (early access), Dec 2021, DOI: 10.1109/TMC.2021.3135535
8. Lijun Yao, Zhiwei Xu, Xudong Zhao, Yang Chen, Liang Liu, Xiaoming Fu, Fazhan Chen, Therapists and psychotherapy side effects in China: A machine learning-based study, **Heliyon**, Vol. 8, No. 11, e11821, Nov 2022
9. H. Chen, Z. Li, X. Fu, Data-driven Analysis on YouTube International Chinese Learning Resources, Journal of Capital Normal University (Social Sciences Edition), Volume 2022, No. 6, pages 94-106, Nov 2022.
10. Song Yang, Jintian Liu, Fei Zhang, Fan Li, Xu Chen, Xiaoming Fu, "Caching-Enabled Computation Offloading in Multi-Region MEC Network via Deep Reinforcement Learning", **IEEE Internet of Things Journal**, vol. 9, issue 21, pp. 21086 - 21098, Nov 2022.
11. Deke Guo, Bangbang Ren, Guoming Tang, Lailong Luo, Tao Chen, Xiaoming Fu, "Optimal Embedding of Aggregated Service Function Tree", **IEEE Transactions on Parallel and Distributed Systems**, vol. 33, issue 10, pp. 2584-2596, Oct 2022.
12. Jiaquan Zhang, Hui Chen, Xiaoming Yao, and Xiaoming Fu, "CPFinder: Finding an unknown Caller's profession from anonymized mobile phone data", **Digital Communications and Networks**, Elsevier, Vol. 8, pp. 324–332, Aug 2022, DOI: [10.1016/j.dcan.2021.08.003](https://doi.org/10.1016/j.dcan.2021.08.003)
13. Tingting Yuan, Wilson da Rocha Neto, Christian Esteve Rothenberg, Katia Obraczka, Chadi Barakat, Thierry Turetli, Machine learning for next-generation intelligent transportation systems: A survey. **Transactions on Emerging Telecommunications Technologies**, vol. 33, No. 4, e4427, Aug. 2022
14. Yanan Gao, Song Yang, Fan Li, and Xiaoming Fu, "Adaptive and Efficient Qubit Allocation Using Reinforcement Learning in Quantum Networks", **IEEE Network**, Vol. 36, No. 5, pages 48-54, Sept/Oct 2022. DOI: 10.1109/MNET.001.2200157
15. Yali Yuan, Chencheng Liang, Xu Chen, Thar Baker, Xiaoming Fu, Adaptive Fuzzy Game-Based Energy-Efficient Localization in 3D Underwater Sensor Networks, **ACM Transactions on Internet Technology**, 22(2): 1-20, May 2022, DOI: 10.1145/3406533
16. Tao Zhao, Lu Tang, Jinfeng Huang, Xiaoming Fu, "Coupled Social Media Content Representation for Predicting Individual Socioeconomic Status", **Expert Systems with Applications**, vol. 198, issue 116744, July 2022.
17. Xiaoming Yao, Shichang Ding, Tao Zhao, Hong Huang, Jar-Der Luo, and Xiaoming Fu, "Data-Driven based Socioeconomic Status Analysis: A Survey", **Computer Science**, vol. 49, issue 4, pp. 80-87, Apr 2022.
18. Weijun Wang, Haipeng Dai, Chao Dong, Fu Xiao, Jiaqi Zheng, Xiao Cheng, Guihai Chen, Xiaoming Fu, "Deployment of Unmanned Aerial Vehicles for Anisotropic Monitoring Tasks", **IEEE Transactions on Mobile Computing** vol. 21, issue 2, pp. 495-513, February 2022, DOI: 10.1109/TMC.2020.3012791
19. Bangbang Ren, Yali Yuan, Deke Guo, Guoming Tang, Weijun Wang, Xiaoming Fu, "Optimal Deployment of SRv6 to Enable Network Interconnection Service", **IEEE/ACM Transactions on Networking**, vol. 30, issue 1, pp. 120-133, February 2022., DOI: 10.1109/TNET.2021.3105959
20. Song Yang, Fan Li, Ramin Yahyapour, Xiaoming Fu, Delay-Sensitive and Availability-Aware Virtual Network Function Scheduling for NFV. **IEEE Transactions on Services Computing**, vol. 15, issue 1, pp. 188-201, Jan 2022, DOI: 10.1109/TSC.2019.2927339

Papers in Peer-Reviewed International Conferences and Workshops

21. Biao Hou, Song Yang, Fernando A. Kuipers, Lei Jiao, and Xiaoming Fu, EAVS: Edge-assisted Adaptive Video Streaming with Fine-grained Serverless Pipelines, IEEE International Conference on Computer Communications (**INFOCOM 2023**), New York, USA, May 2023.
22. Tingting Yuan, Weijun Wang, Liang Mi, Haipeng Dai and Xiaoming Fu, AccDecoder: Accelerated Decoding for Neural-enhanced Video Analytics, **IEEE INFOCOM 2023**, New York, USA, May 2023
23. Tingting Yuan, Hwei-Ming Chung and Xiaoming Fu, DAMA: Learning Delay-Aware Communication for Multi-Agent Reinforcement Learning, Thirty-Seventh AAAI Conference on Artificial Intelligence (**AAAI 2023**), Washington DC, February 2023.
24. Aoran Li, Jiajun Wu, Shuai Xu, Yalei Zang, Yi Liu, Jiayi Lu, Yanchao Zhao, Gaoxu Wang, Qing Meng, Xiaoming Fu, "Graph-based Sequential Interpolation Recommender for Cold-Start Users", The 6th APWeb-WAIM Joint International Conference on Web and Big Data (**APWeb-WAIM 2022**), Nov 2022, Nanjing, China (**Best Student Paper Award**)
25. Haipeng Dai, Xuzhen Lin, Jiaqi Zheng, Yuben Qu, Weijun Wang, Shuyu Shi, Chi Lin, Wanchun Dou. DARPA: Deployment of UAVs for Polygonal Sizable Object Surveillance. Proceedings of 19th IEEE Annual International Conference on Sensor and Ad Hoc Communications and Networks (**SECON 2022**), pp. 298-306, Sept 2022.
26. Haipeng Dai, Yue Zhao, Weijun Wang, Rong Gu, Yuben Qu, Chi Lin, Lijie Xu, Wanchun Dou. Placing Wireless Chargers with Multiple Antennas. Proceedings of 19th IEEE Annual International Conference on Sensor and Ad Hoc Communications and Networks (**SECON 2022**), pp. 479-487, Sept 2022.
27. H. Chen, Zhengze Li, Yan Zhou, Xiaoming Fu. On International Chinese Education Index Ranking in a Global Perspective. In: Wen Hua, Hua Wang, Lei Li (eds): Databases Theory and Applications - Proceedings of the 33rd Australasian Database Conference (**ADC 2022**), Sydney, Australia, September 2022. Lecture Notes in Computer Science 13459, Springer, ISBN 978-3-031-15511-6ADC 2022, pages 3-20.
28. Xiaoming Fu, Tingting Yuan, Weijun Wang, Fabian Wölk, and Günter Strunz, "Towards Exploiting Stakeholder Resources for Data-Driven Resilient Hazard Management", 1st IEEE International Workshop on Social and Metaverse Computing and Networking (**SocialMeta 2022**), in Proceedings of IEEE 42nd International Conference on Distributed Computing Systems (**ICDCS 2022 Workshops**), Bologna, Italy, July 2022.
29. Lihao Wang, Weijun Wang, Haipeng Dai, Jiaqi Zheng, Bangbang Ren, Shuyu Shi, Rong Gu. DUET: Joint Deployment of Trucks and Drones for Object Monitoring. Proceedings of 30th IEEE/ACM International Symposium on Quality of Service (**IWQoS 2022**), Oslo, Norway, June 2022.
30. Yali Yuan, Weijun Wang, Yuhan Wang, Sripriya Srikant Adhatarao, Bangbang Ren, Kai Zheng, Xiaoming Fu, "VSiM: Improving QoE Fairness for Video Streaming in Mobile Environments", **IEEE INFOCOM 2022**, May 2022.

(Extended) Abstracts, Posters and Demos

31. Tingting Yuan, Jie Yuan, Dongxiao Liu, and Xiaoming Fu, "Rethinking the Role of Communication in Collective Intelligence: Benefits and Costs", Proceedings of **ACM SIGCOMM 2022 Workshops**, Amsterdam, the Netherlands, Aug 2022
32. Qingyuan Gong, Yang Chen, Xinlei He, Yu Xiao, Pan Hui, Xin Wang, Xiaoming Fu: Cross-Site Prediction on Social Influence for Cold-Start Users in Online Social Networks. Proceedings of **WWW (Companion Volume) 2022**: 389

Technical Reports

33. Tingting Yuan, Hwei-Ming Chung, Xiaoming Fu: PP-MARL: Efficient Privacy-Preserving MARL for Cooperative Intelligence in Communication. arXiv, No. CoRR abs/2204.12064 (2022)
34. Tingting Yuan, Hwei-Ming Chung, Jie Yuan, Xiaoming Fu: DACOM: Learning Delay-Aware Communication for Multi-Agent Reinforcement Learning. arXiv, No. CoRR abs/2212.01619 (2022)

PhD Dissertations

35. Weijun Wang, Sensing, Communication and Analysis in UAV Monitoring Systems, PhD Dissertation, Faculty of Mathematics and Computer Science, University of Göttingen, Göttingen, Sept 2022

36. Bangbang Ren, Research on Function Deployment and Routing in Network Virtualization, PhD Dissertation, NUDT, 2022.

Master Theses

37. Tapashi Gosswami, A Class Reweighting Framework with Deep Convolutional Networks on Imbalanced Clinical Image Datasets, master thesis, Institute of Computer Science, University of Göttingen, Göttingen, May 2022

Scientific Contacts

Incoming short/mid-term researcher visits

Incoming visitors	Institution (from)	Detailed information	Date
Dr. Jianhua He	Essex University, UK	Visiting NET group and co-organized the 2022 Workshop on Intelligent Connected Autonomous Vehicles and Smart Mobility, co-funded by EU COSAFE project	Oct 2022
Dr. Wei Wang	Huazhong University of Science and Technology, China, and Essex University, UK	Visiting NET group funded by EU VESAFE project	Oct 2022
Dr. Kan Lin	Ranplan Wireless, UK	Visiting NET group funded by EU COSAFE project	Aug-Nov 2022

Outgoing research visits

Out-going visitors	Institution visited	Detailed information	Date
X. Fu	Tsinghua U., Peking U., Chinese Academy of Sci., Fudan, Nanjing U., Shanghai U. of Finance & Economics,	Funded by EU COSAFE project	Dec 2022-Jan 2023
T. Yuan	King's College London, Birmingham City Council, Ranplan Wireless & University of Essex, UK	Funded by EU COSAFE project & Humboldt Foundation	Nov 2022-Jan 2023
X. Fu	UNSW, USyd, UTS & U Macquarie in Sydney and ANU in Canberra, Australia	Collaboration on UAV, big data and advanced networks	Aug-Sept 2022
X. Fu	University of Bologna, Italy	Visiting Profs. Paolo Bellavista and Giovanni Pau for collaborations and gave a talk	July 2022
W. Wang	Tsinghua U. & Nanjing U., China	Visiting Profs. Yunxin Liu (Tsinghua), Guihai Chen, Haipeng Dai (Nanjing)	Dec 2021-Apr 2022, Sept 2022-Feb 2023

Conferences, events and meeting participations and presentations

Participant	Conference/event	Detailed information	Date
F. Wölk	IEEE ICNP 2022, Lexington, KY, USA	Attending the conference	Nov 2022
X. Fu	NoF 2022, Ghent, Belgium	Keynote Co-Chair	Oct 2022
X. Fu, T. Yuan, W. Wang, Z. Li	Meetings with Gotion Company, Göttingen	Discussing potential collaborations on big data and smart sensing	Sept-Dec 2022
X. Fu	ADC'22, Sydney, Australia	Presenting a paper	Aug 2022
W. Wang &	ACM SIGCOMM 2022, Amsterdam,	Presenting a paper at workshop; attending	Aug 2022

T. Yuan	the Netherlands	the conference	
X. Fu, F. Wölk, T. Yuan, W. Wang, Z. Li	Meetings with City Göttingen leaders, GWG, City Bus Company (GöVB) & Disposal Company (GEB), Göttingen	Discussing collaborations on smart cities	July-Dec 2022
X. Fu	IEEE ICDCS 2022, Bologna, Italy	Giving an invited talk at SocialMeta and chaired a session at ICDCS	July 2022
X. Fu, F. Wölk, Z. Li	City Hagen, Germany	Visiting the flooded areas in Hagen, meeting Hagen's emergency management agency and discussing collaborations on flood management	June 2022

News Press Releases

Source	Detailed information	Date
Uni Göttingen NET News	New DAAD-RGC project approved	Dec 2022
Uni Göttingen NET News	New DAAD-PPP Australia project approved	Nov 2022
Uni Göttingen NET News	New EU COVER project approved	Nov 2022
Uni Göttingen NET News	EU proposal CODECO approved	July 2022
Uni Göttingen IFI News	Prof. Fu received the 2022 IEEE ComSoc Internet Technical Committee Outstanding Service Award	June 2022

Awards

- Tingting Yuan, Humboldt Scholar (December 2021-November 2022)
- Tingting Yuan, ACM SIGCOMM 2022 Travel Grant
- Fabian Wölk, IEEE ICNP 2022 Student Travel Grant
- Xiaoming Fu, IEEE Fellow (Class 2022)
- Xiaoming Fu, IEEE Communications Society Internet Technical Committee Outstanding Service Award 2022
- Aoran Li, Jiajun Wu, Shuai Xu, Yalei Zang, Yi Liu, Jiayi Lu, Yanchao Zhao, Gaoxu Wang, Qing Meng, Xiaoming Fu, "Graph-based Sequential Interpolation Recommender for Cold-Start Users", **Best Student Paper Award**, at the 6th APWeb-WAIM Joint International Conference on Web and Big Data (APWeb-WAIM 2022), Nov 2022, Nanjing, China

Professional Services (X. Fu unless noted)

University Services

- International Officer - Computer Science, [Faculty of Mathematics & Computer Science](#), University of Göttingen
- Substitution Member of Faculty Board, Faculty of Mathematics & Computer Science, University of Göttingen
- Director, [Sino-German Institute of Social Computing](#), University of Göttingen
- Member, [Center for Computational Sciences](#), University of Göttingen
- Member, [Centre for Statistics](#), University of Göttingen
- Member, [Campus Institute Data Science \(CIDAS\)](#), University of Göttingen

- Steering Board Member of International Master/PhD program “[Internet Technology and Information Systems \(ITIS\)](#)”, University of Göttingen (now phasing out)
- Speaker of [Doctoral program “PhD in Computer Science” \(PCS\)](#), University of Göttingen
- Coordinator of [Planet-Lab](#) membership for University of Göttingen

Elected, Appointed or Adjunct Positions

- Board Member, Center for Social Network Research, Tsinghua University, Beijing, China
- Board Member, [Tsinghua-NRI China Research Center](#), Beijing, China
- Overseas Evaluation Expert, Chinese Academy of Sciences, China
- Guest Professor, Nanjing University, China
- Guest Professor, Northeastern University, China
- Guest Professor, Shanghai University of Finance and Economics, China
- Grant Evaluator: DFG, DAAD, Fulbright Program, NSFC, RGC, NSF, etc.
- Panel Member: Research Grants Council (RGC) Hong Kong
- Member of Expert Group: The H2020 [European IoT HUB - Growing a sustainable and comprehensive ecosystem for Next Generation Internet of Things \(EU-IoT\)](#) project
- IEEE Computer Society Fellow Evaluation Committee (2023)
- Award Committee, [IEEE Communications Society CNOM Young Professional Award](#) (2021-2024)
- Board Member: [GDPCH \(Gesellschaft für Deutsche Professoren Chinesischer Herkunft e.V.\)](#)
- Co-Chair: IEEE Vehicular Technology Society (VTS) Germany Chapter
- Co-Speaker: Humboldt Club Regional Group Göttingen-Kassel

Conference organization

- TPC Co-Chair, 14th International Conference on Network of the Future (NoF 2023), Oct 2023, Izmir, Turkey
- Steering Committee Chair, ACM/IEEE SIGMOBILE International Workshop on Mobility in the Evolving Internet Architecture (MobiArch, 2006-present), including MobiArch’22@MobiCom 2022, Sydney, Australia
- Steering Committee, IEEE INFOCOM 2019-2023 International Workshop on Intelligent Cloud Computing & Networking (ICCN)
- Keynote Co-Chair, International Conference on the Network of Future (NoF 2022), Oct 2022, Ghent, Belgium
- Organizer, 2022 Workshop on Intelligent Connected Autonomous Vehicles and Smart Mobility, Oct 18, 2022, Göttingen, Germany. See program below:

2022 Workshop on Intelligent Connected Autonomous Vehicles and Smart Mobility

Date: Oct 18, 2022, Venue: Room 2.101, Institut für Informatik, Goldschmidtstr. 7, 37077 Göttingen & Online via Zoom

Co-sponsored by IEEE VTS Germany Chapter, IEEE ComSoc Technical Committee on Green Communications and Computing

(TCGCC), EU H2020 COSAFE and VESAFE projects

18/10/2022	Activities	Speaker	Note
09:30-09:35	Welcome notes, introduction to IEEE VTS Germany Chapter, agenda bashing	Prof Xiaoming Fu, IEEE Fellow, UGOE; Dr Jianhua He, U. Essex, UK	Workshop co-organizer COSAFE coordinator
09:35-09:40	Introduction of IEEE ComSoc TGCCC	Prof Yan Zhang, IEEE Fellow, University of Oslo, Norway	IEEE TGCCC Chair
	Session chair	Xiaoming Fu	
09:40-10:10	Collaborative collision avoidance using 5G/6G: "The wireless seat belt"	Prof Klaus David, University of Kassel, Germany	Co-Chair of IEEE VTS Germany Chapter
10:10-10:40	Over the air federated learning	Prof Yusheng Ji, IEEE Fellow, National Institute of Informatics, Japan	(online) IEEE VTS Distinguished Lecturer
10:40-11:00	Coffee break		
	Session chair	Klaus David	
11:00-11:30	Wireless powered communications in the era of 6G	Prof Ioannis Krikidis, IEEE Fellow, University of Cyprus, Cyprus	(online)
11:30-12:00	Object tracking and sensor fusion for automotive applications	Prof Marcus Baum, Univ. of Göttingen	
12:00-12:30	Urban traffic modelling and applications	Laura Li & Andrew Radford, Birmingham City Council, UK	(online)
12:30-13:30	Lunch and networking		
	Session chair	Marcus Baum	
13:30-14:00	Towards trustworthy mobile crowdsensing and location-based services	Prof Panagiotis Papadimitratos, IEEE Fellow, KTH, Sweden	(online)
14:00-14:30	A geometric theory of the Doppler frequency for general non-stationary 3D mobile-to-mobile channels	Dr. Michael Walter, DLR, Germany	(online)
14:30-14:50	6G V2X for future vehicle communications	Dr. Zilong Liu, Univ. of Essex, UK	(online)
14:50-15:10	Smart City Initiative in City Göttingen	Lauritz Kawe, City Göttingen	
15:10-15:30	Coffee break and networking		
	Session chair	Jianhua He	
15:30-16:00	Protecting Vulnerable Road Users through Joint Communication & Sensing	Dr. Fabian de Ponte Mueller, DLR, Germany	
16:00-16:20	Emergency Braking With ACC: How Much Does V2V Communication Help?	Daniel Plöger, Prof. Andreas Timm-Giel, Hamburg Univ of Technology	(online)
16:20-16:40	Cooperative intelligent IoVs for autonomous driving	Dr Kai Xiong, UESTC, China	(online)
16:40-17:05	Simulative Performance Evaluation of Manoeuvre Coordination Service using ITS-G5	Keno Garlich, Prof. Lars Wolf, TU Braunschweig	
17:05-17:30	Enhanced Edge Intelligence for Connected and Autonomous Vehicles	Prof Wei Wang, Univ. of Essex, UK & HUST, China	
17:30-17:50	Neural-enhanced Video Analytics for Traffic Surveillance in Smart Cities	Dr Tingting Yuan, University of Göttingen	
18:00-21:00	Dinner and networking		

Technical Program Committees

- TPC Member for a number of conferences (IEEE/ACM/IFIP)

Journal Editorship

- Founding Co-Editor-in-Chief, [Journal of Social Computing](#) (IEEE and Tsinghua University Press)
- Technical Editor, IEEE Network
- Associate Editor, IEEE Transactions on Network and Service Management
- Associate Editor, Chinese Journal of Electronics
- Area Editor, Elsevier Computer Communications Journal
- Guest Editor, IEEE Transactions on Network Science and Engineering, [Special Issue on The Nexus Between Edge Computing and AI for 6G Networks \(2022\)](#)
- Guest Editor, IEEE Open Journal of the Communications Society, [Special Issue on Collaborative AI for Edge-Cloud Computing and Applications](#) (2023)

Previous (Bi)Annual Reports of NET Group

- [2021](#), [2020](#), [2019](#), [2018](#), [2016-2017](#), [2015](#), [2014](#), [2013](#), [2012](#), [2011](#), [2010](#), [2009](#), [2007-2008](#)

Enjoy reading and look forward to seeing you in 2023!