Huanzhuo **Wu**

RESEARCH SCIENTIST · TELECOMMUNICATION

✉ wuhuanzhuo@gmail.com | 🔗 huanzhuo-wu-4574878b | 🎓 Google Scholar |

Chinese (Native C2), English (Proficient B2), German (Conversational B2)

Profile

I am Huanzhuo Wu, a telecommunications research engineer at Nokia in Munich, Germany, following my research position at the Deutsche Telekom Chair of Communication Networks (ComNets) at TU Dresden, Germany. My research focuses on *Mobile Network Architecture* and *In-network Computing/Edge Computing* for 5G-Advanced and 6G, with multiple peer-reviewed publications in these areas. In addition, during my Ph.D., I was also responsible for applying for and managing research projects in collaboration with leading research institutions and companies. For the latest details, please visit to my personal website at `https://huanzhuo.github.io` or by scanning the QR code in the footer.

Work Experience

Nokia
Munich, Germany

SENIOR RESEARCH SPECIALIST — *Jan. 2023 - Present*

- 5G-Advanced and 6G related research.
- Core network architecture design.
- 3GPP standardization.

Technische Universität Dresden (TU Dresden)
Dresden, Germany

JUNIOR RESEARCHER — *Feb. 2017 - Dec. 2022*

- Conducting research activities on In-network Computing and Industrial 5G networks using SDN, machine learning, and neural networks, with publications, talks, and exhibitions on e.g., IEEE GlobeCom, IEEE ICC, IEEE Internet of Things Journal, CES, and Hanover Messe.
- Coordinating and managing research projects, in cooperation with Ericsson, Robert Bosch GmbH, Huawei Munich Research Center, TU Munich, RWTH Aachen, and other key partners.
- Applying for funding on research projects, i.e., Exist for research transfer from the Federal Ministry of Economics and Technology Germany (BMWK) in 2022, Software Campus for IT-Talent from the Federal Ministry of Education and Research Germany (BMBF) in 2020.
- Teaching and supervising students.

Audi China
Beijing, China

IT INTERN — *Aug. 2016 - Nov. 2016*

- Managing and supporting projects related to digitalization (Audi Connect, App Center, and Cloud Project).
- Supporting enterprise-university cooperation.

BMW AG
Dingolfing, Germany

QUALITY MANAGEMENT INTERN — *May. 2015 - Oct. 2015*

- Quality management by supporting SAP solutions in the production plant.
- Optimizing and updating the quality management meta model and creating quality reports.

Education

Technische Universität Dresden (TU Dresden)
Dresden, Germany

PH.D. IN ELECTRICAL ENGINEERING — *Feb. 2017 - Apr. 2022*

- Topic: In-network Audio Processing for Low-latency Industrial Applications.
- Final Grade: magna cum laude.

Technische Universität Dresden (TU Dresden)
Dresden, Germany

MASTER OF SCIENCE IN COMPUTER SCIENCE — *Apr. 2012 - Dec. 2016*

- Master Thesis: Regenerating Codes.
- Thesis Grade: 1.3.

TUDIAS
Dresden, Germany

GERMAN LANGUAGE COURSE — *Aug. 2011 - Mar. 2012*

- Final Grade: DSH 2.

Chang'an University
Xi'an, China

BACHELOR OF SCIENCE IN COMPUTE ENGINEERING — *Sept. 2007 - July. 2011*

- Bachelor Thesis: Wireless Sensor Network.
- Final Grade: A.

Project Experience

6G-ANNA

WITH NOKIA, ERICSSON, AND OTHER KEY PARTNERS
Sep. 2022 - Present

- Contributing to the topic on In-network Computing for 6G systems

6G-life

WITH TECHNISCHE UNIVERSITÄT MÜNCHEN (TU MUNICH)
May. 2022 - Nov. 2022

- Contributing to the topic on accelerating controlling systems with In-network Computing, using the machine learning scikit-learn.
- Coordinating and tracking research progress with partners, including research topics and publication plans.

Hexa-X

WITH NOKIA, ERICSSON, AND OTHER KEY PARTNERS
June. 2021 - Dec. 2022

- Contributing to the topic on integrating AI into networks, using the neural network framework PyTorch and the network simulator Mininet.
- Presenting project results on international conferences and journals.

Software Campus Net-BliSS

WITH HUAWEI MUNICH RESEARCH CENTER
Mar. 2021 - Dec. 2022

- Leading the project on In-network Computing for time-sensitive industrial applications, with internal and external partners, as well as reporting to Projektträger DLR.
- Creating project proposal, including research subjects, work plan, manpower, and budget.
- Tracking project progress and maintaining project records.
- Presenting project results at international conferences and exhibitions, e.g., IEEE GlobeCom, IEEE ICC, and CES.
- Training in leadership and management.

5Gang

WITH ERICSSON, ROBERT BOSCH GMBH, RWTH AACHEN, AND OTHER KEY PARTNERS
Mar. 2017 - Nov.2020

- Responsible for the project on utilizing 5G in the industrial IoT networks, with internal Ph.D. researchers.
- Coordinating with industrial partners, reporting to Projektträger VDI/VDE.
- Tracking project progress and maintaining project records.
- Presenting project results at international conferences and exhibitions, e.g., IEEE GlobeCom, CES, and Hannover Messe.
- Organizing and participating in workshops.

FastRobotics

WITH KUKA, FRAUNHOFER IFF, AND OTHER KEY PARTNERS
Mar. 2017 - Dec.2020

- Contributing to the topic on Digital Twins.

Selected Publications

The complete publication list is available on my personal website at `https://huanzhuo.github.io` or via the QR code in the footer.

Journal Articles

- **Huanzhuo Wu**, Jia He, Jiakang Weng, Giang T. Nguyen, Martin Reisslein, and Frank H. P. Fitzek, "OptCDU: Optimizing the Computing Data Unit Size for COIN", In IEEE Transactions on Network and Service Management, May 2024.
- **Huanzhuo Wu** and Yunbin Shen and Xun Xiao and Giang T. Nguyen and Artur Hecker and Frank H. P. Fitzek, "Accelerating Industrial IoT Acoustic Data Separation with In-Network Computing", In IEEE Internet of Things Journal, May 2022.
- Jia He and **Huanzhuo Wu** and Xun Xiao and Riccardo Bassoli and Frank H. P. Fitzek, "Functional Split of In-Network Deep Learning for 6G: A Feasibility Study", In IEEE Wireless Communications, Jan. 2022.
- **Huanzhuo Wu** and Zuo Xiang and Giang T. Nguyen and Yunbin Shen and Frank H. P. Fitzek, "Computing Meets Network: COIN-aware Offloading for Data-intensive Blind Source Separation", In IEEE Network Magazine, June 2021.
- **Huanzhuo Wu** and Giang T. Nguyen and Anil K. Chorppath and Frank H. P. Fitzek, "Network Slicing for Conditional Monitoring in the Industrial Internet of Things", Online IEEE Software Defined Networks, IEEE Softwarization, Jan. 2018.

Conference Papers

- **Huanzhuo Wu** and Jia He and Máté Tömösközi and Zuo Xiang and Frank H. P. Fitzek, "In-Network Processing for Low-Latency Industrial Anomaly Detection in Softwarized Networks", In 2021 IEEE Global Communications Conference: Next-Generation Networking and Internet (Globecom2021 NGNI), Madrid, Spain, 2021.
- **Huanzhuo Wu** and Yunbin Shen and Xun Xiao and Artur Hecker and Frank H. P. Fitzek, "In-Network Processing Acoustic Data for Anomaly Detection in Smart Factory", In 2021 IEEE Global Communications Conference: IoT and Sensor Networks (Globecom2021 IoTSN), Madrid, Spain, 2021.
- **Huanzhuo Wu** and Jia He and Máté Tömösközi and Frank H. P. Fitzek, "Abstraction-based Multi-object Acoustic Anomaly Detection for Low-complexity Big Data Analysis", In WS17 IEEE ICC 2021 Workshop on Communication, Computing, and Networking in Cyber-Physical Systems (WS17 ICC'21 Workshop - CCN-CPS), Montreal, Canada, 2021.
- **Huanzhuo Wu** and Ievgenii A. Tsokalo and David Kußand Hani Salah and Lukas Pingel and Frank H. P. Fitzek, "Demonstration of Network Slicing for Flexible Conditional Monitoring in Industrial IoT Networks", In 2019 16th IEEE Annual Consumer Communications & Networking Conference (CCNC) (CCNC 2019), Las Vegas, USA, 2019.

Book Chapter

- Fabrizio Granelli and Giang T. Nguyen and **Huanzhuo Wu**, "Realizing Network Slicing", In Computing in Communication Networks –From Theory to Practice, Elsevier, vol. 1, pp. 271-289, 2020.