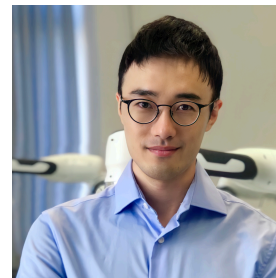# Huanzhuo **Wu**

RESEARCH SCIENTIST · TELECOMMUNICATION

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

Profile

I am Huanzhuo Wu, a researcher at the Deutsche Telekom Chair of Communication Networks (ComNets) at Technische Universität Dresden (TU Dresden), Germany. My particular research interests are *In-network Computing*, *Software Defined Networks (SDN)*, and *Algorithm Optimization*, with more than 20 peer-reviewed publications and several research projects. For the latest details about my projects, publications, and activities, please refer to my personal website at `https://huanzhuo.github.io` or by scanning the QR code in the footer.

Work Experience

Technische Universität Dresden (TU Dresden)
Dresden, Germany

JUNIOR RESEARCHER · *Feb. 2017 - Present*

- Coordinating and managing research projects, in cooperation with Ericsson, Robert Bosch GmbH, Huawei Munich Research Center, TU Munich, RWTH Aachen, and other key partners.
- Conducting research on In-network Computing and Industrial 5G using scikit-learn, PyTorch, Mininet, Ryu SDN Framework, and Open vSwitch, with publications, talks, and demos on e.g., IEEE GlobeCom, IEEE ICC, IEEE Internet of Things Journal, CES, and Hanover Messe.
- 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 metamodel.
- Creating quality reports.

Education

Technische Universität Dresden (TU Dresden)
Dresden, Germany

PH.D. IN ELECTRICAL ENGINEERING · *Feb. 2017 - Present*

- Topic: In-network Audio Processing for Low-latency Industrial Applications.
- Grad Year: Expected Q3 2022.

Technische Universität Dresden (TU Dresden)
Dresden, Germany

MASTER OF SCIENCE IN COMPUTE 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-life
funded by BMBF
WITH TECHNISCHE UNIVERSITÄT MÜNCHEN (TU MUNICH)
May. 2022 - Present
- Contributing to the topic on accelerating controlling systems with In-network Computing.
- Coordinating research agenda with partners, including research topics and publication plans.

Hexa-X
funded by European Commission
WITH NOKIA, ERICSSON, AND OTHER KEY PARTNERS
June. 2021 - Present
- Contributing to the topic on integrating AI into networks.
- Presenting project results on international events, e.g., conferences and exhibitions.

Software Campus Net-BliSS
funded by BMBF
WITH HUAWEI MUNICH RESEARCH CENTER
Mar. 2021 - Present
- Leading the project on In-network Computing for time-sensitive industrial applications.
- Creating project proposal, including research subjects, work plan, manpower, and budget.
- Coordinating with the industrial partner, and communicating and reporting to Projektträger DLR.
- Presenting project results on international events, e.g., conferences and exhibitions.
- Managing research progress, research/student assistant.
- Training in leadership and management.

5Gang
funded by BMBF
WITH ERICSSON, ROBERT BOSCH GMBH, RWTH AACHEN, AND OTHER KEY PARTNERS
Mar. 2017 - Nov.2020
- Responsible for the project on utilizing 5G in the industry.
- Coordinating with industrial partners, and communicating and reporting to Projektträger VDI/VDE.
- Presenting project results on international events, e.g., conferences and exhibitions.
- Managing research progress, research/student assistant.
- Organizing and participating in workshops.

FastRobotics
funded by BMBF
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** 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, pp. 1-15, 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, pp. 1-7, (submitted, 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, 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.