

Dr. Wei Guo

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Academic Positions

Hong Kong University of Science and Technology Postdoctoral Fellow. Hosts: Prof. Khaled B. Letaief and Prof. Jun Zhang	Sept. 2023 – Present Hong Kong SAR, China
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Education

The Chinese University of Hong Kong, Shenzhen (CUHK-Shenzhen) Ph.D., Computer and Information Engineering. Advisor: Prof. Chuan Huang	Jul. 2023 Shenzhen, China
University of Electronic Science and Technology of China (UESTC) B.Eng., Communications Engineering	Jun. 2017 Chengdu, China

Academic Visits

Purple Mountain Laboratories Visiting student for National Key Research and Development Program of China	Sept. 2021 – Nov. 2021 Nanjing, China
The Future Network of Intelligence Institute (FNii), CUHK-Shenzhen Visiting student. Advisors: Prof. Chuan Huang and Prof. Shuguang Cui	Jun. 2019 – Dec. 2019 Shenzhen, China
Shenzhen Reserach Institute of Big Data (SRIBD) Visiting student. Advisor: Prof. Shuguang Cui	Feb. 2017 – Jun. 2017 Shenzhen, China

Current Research Interests

Wireless Communications, Generative AI, Integrated Communications and AI

Publications

Journals: (✉ denotes corresponding author)

- Tianyi Liao, **Wei Guo**[✉], Hengtao He, Shenghui Song, Jun Zhang, and Khaled B. Letaief, “Joint Beamforming and Antenna Position Optimization for Fluid Antenna Assisted MU-MIMO Networks,” in *IEEE J. Sel. Areas Commun. (JSAC)*, early access, doi: 10.1109/JSAC.2025.3615569, 2025.
- Jiawei Shao, Jingwen Tong, Qiong Wu, **Wei Guo**, Zijian Li, Zehong Lin, and Jun Zhang[✉], “WirelessLLM: Empowering Large Language Models Towards Wireless Intelligence,” in *J. Commun. Inf. Netw. (JCIN)*, vol. 9, pp. 99-112, Jun. 2024.
- Wei Guo**, Chuan Huang[✉], Xiaoqi Qin, Lian Yang, and Wei Zhang, “Dynamic Clustering and Power Control for Two-Tier Wireless Federated Learning,” in *IEEE Trans. Wireless Commun. (TWC)*, vol. 23, no. 2, pp. 1356-1371, Feb. 2024.
- Wei Guo**, Ran Li, Chuan Huang[✉], Xiaoqi Qin, Kaiming Shen, and Wei Zhang, “Joint Device Selection and Power Control for Wireless Federated Learning,” in *IEEE J. Sel. Areas Commun. (JSAC)*, vol. 40, no. 8, pp. 2395-2410, Aug. 2022.

- **Wei Guo**, Han Zhang[✉], and Chuan Huang, “Energy Efficiency of Two-Way Communications under Various Duplex Modes,” in *IEEE Internet Things J. (IoT-J)*, vol. 8, no. 3, pp. 1921-1933, Feb. 2021.

Conference Proceedings:

- **Wei Guo**, Meng He, Chuan Huang, Hengtao He, Shenghui Song, Jun Zhang, and Khaled B. Letaief, “Model-Driven Deep Learning for Distributed Detection with Binary Quantization,” in *Proc. IEEE Mediterranean Conf. Commun. Netw. (MeditCom)*, Jul. 2024.
- **Wei Guo**, Ran Li, Chuan Huang, Xiaoqi Qin, Kaiming Shen, and Wei Zhang, “Optimized Device Selection and Power Control for Wireless Federated Learning,” in *Proc. IEEE Glob. Commun. Conf. (Globecom)*, Dec. 2022.
- **Wei Guo**, Chuan Huang, Xiaoqi Qin, Lian Yang, and Wei Zhang, “Dynamic Clustering and Power Control for Two-Tier Over-the-Air Federated Learning,” in *Proc. IEEE/CIC Int. Conf. Commun. China (ICCC)*, Aug. 2022.
- **Wei Guo** and Chuan Huang, “Energy Efficiency of Full-Duplex Two-Way Channels,” in *Proc. Glob. Conf. Signal Inf. Process. (GlobalSIP)*, Nov. 2019.

Patents:

- CN patent: “一种面向无线联邦学习的用户协同传输方法”, 黄川, 崔曙光, 郭玮. 专利申请号: 202211032064.0, 2022.

Preprints:

- Yancheng Wang, Chuan Huang, Songyang Zhang, Guanying Chen, **Wei Guo**, Shenglun Lan, Lexi Xu, Xinzhou Cheng, Xiongyan Tang, and Shuguang Cui, “Point Cloud Environment-Based Channel Knowledge Map Construction,” (arXiv: 2510.08140), 2025. Note: Submitted to an IEEE Magazine for possible publication.
- Yancheng Wang, **Wei Guo**, Chuan Huang, Guanying Chen, Ye Zhang, and Shuguang Cui, “Point Cloud Environment-Based Channel Knowledge Map Construction,” (arXiv: 2506.21112), 2025. Note: Submitted to an IEEE Journal for possible publication.
- Erqiang Tang, **Wei Guo**, Hengtao He, Shenghui Song, Jun Zhang, and Khaled B. Letaief, “Accurate and Fast Channel Estimation for Fluid Antenna Systems with Diffusion Models,” (arXiv: 2505.04930), 2025. Note: Accepted by IEEE GlobeCom 2025.
- Tianyi Liao, **Wei Guo**, Hengtao He, Shenghui Song, Jun Zhang, and Khaled B. Letaief, “Fluid Antenna-Assisted MU-MIMO Systems with Decentralized Baseband Processing,” (arXiv: 2505.04936), 2025. Note: Accepted by IEEE Globecom 2025.
- Jingwen Tong, **Wei Guo**, Jiawei Shao, Qiong Wu, Zijian Li, Zehong Lin, and Jun Zhang, “WirelessAgent: Large Language Model Agents for Intelligent Wireless Networks,” (arXiv: 2409.07964), 2024. Note: Submitted to China Communications for possible publications.

Teachings

Teaching assistant at CUHK-Shenzhen:

EIE4006 Performances Evaluation of Communication Networks	Sum’ 2020-21
CIE6126 Performances Analysis of Computer and Communication Networks	Sum’ 2020-21
EIE3001 Signals and Systems	Spr’ 2021

Awards

Exemplary Reviewer of IEEE Wireless Communications Letters	2020
Outstanding Bachelor's Degree Thesis in UESTC	2017

Academic Services

Conference Reviewers:

- IEEE Global Communications Conference (Globecom): 2019-2025
- IEEE/CIC International Conference on Communications in China (ICCC): 2019-2025
- IEEE Wireless Communications and Networking Conference (WCNC), 2024.
- IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2024.

Journal Reviewers:

- IEEE Transactions on Wireless Communications
- IEEE Transactions on Communications
- IEEE Journal on Selected Areas in Information Theory
- IEEE Wireless Communications Letters
- IEEE Systems Journal
- IEEE Transactions on Machine Learning in Communications and Networking
- IEEE Internet of Things Magazine
- China Communications
- Journal of Communications and Information Networks
- ...

Presentations

2024 IEEE MeditCom, Madrid, Spain, Oral presentation
2022 IEEE Globecom, Rio de Janeiro, Brazil, virtual presentation
2022 IEEE/CIC ICC, Foshan, China, Oral presentation
2019 IEEE GlobalSIP, Ottawa, Canada, Oral presentation