

Hao Ye

✉ yehao@ucsc.edu 🏠 Homepage 📄 Google Scholar

RESEARCH AREA

- **Signal Processing and Wireless Communication:** Data-driven wireless communication designs for channel estimation, signal detection, beam management, etc.
- **Machine Learning and Edge AI:** Communication efficient designs for federated learning, multi-agent systems, privacy-preserving AI, real-time AI inference, etc.

PROFESSIONAL EXPERIENCE

Assistant Professor

University of California, Santa Cruz

Apr. 2023 – Present

Deep Learning Researcher

Qualcomm AI Research

Apr. 2021 – Mar. 2023

EDUCATION

Ph.D in Electrical and Computer Engineering

Georgia Institute of Technology

Jan. 2017 – Dec. 2020

M.S in Electrical Engineering

Tsinghua University

Sept. 2012 – Jun. 2015

B.Eng in Information Engineering

Southeast University

Chien-Shiung Wu Honors College

Sept. 2008 – Jun. 2012

SELECTED AWARDS & HONORS

- *Fred W. Ellersick Prize Paper Award*, IEEE Communication Society 2022
- *Colonel Oscar P. Cleaver Awards*, Georgia Institute of Technology
Awarded to the best student in the Ph.D Prelim test in School of ECE. 2017
- *First Class Scholarship* (top 5%), Tsinghua University
Tsinghua university scholarship for academic performance 2013
- *First Prize in Contest of Advanced Mathematics*, Jiangsu Province 2010
- *National Scholarship* (top 1%), Southeast University
National scholarship for academic performance 2009

PUBLICATIONS

Preprints under review:

- **Hao Ye** and Le Liang, "On Purely Data-Driven Massive MIMO Detectors," submitted to *IEEE Transactions on Signal Processing*.
- Kai Huang, Le Liang, Xinping Yi, **Hao Ye**, Shi Jin, and Geoffrey Ye Li, "Meta-Learning Empowered Graph Neural Networks for Radio Resource Management," submitted to *IEEE Transactions on Communications*.

Journals:

- Yucheng Sheng, **Hao Ye**, Le Liang, Shi Jin, and Geoffrey Ye Li, "Semantic communication for cooperative perception based on importance map," *Journal of the Franklin Institute*, vol. 361, no. 6, Apr. 2024.
- **Hao Ye**, Le Liang, and Geoffrey Ye Li, "Decentralized Federated Learning with Unreliable Communications," *IEEE Journal of Selected Topics in Signal Processing*, vol. 16, no. 3, pp.487-500, Apr. 2022.
- Zhijin Qin, Geoffrey Ye Li, and **Hao Ye**, "Federated learning and wireless communications," *IEEE Wireless Communication*, vol. 28, no. 5, pp. 134-140, Oct. 2021.
- **Hao Ye**, Geoffrey Ye Li, and Biing-Hwang Juang, "Deep Learning based end-to-end wireless communication systems without pilots," *IEEE Transactions on Cognitive Communications and Networking*, vol. 7, no. 3, pp. 702-714, Sept. 2021.
- Liang Wang, **Hao Ye**, Le Liang, Geoffrey Ye Li, "Learn to compress CSI and allocate resource in vehicular networks," *IEEE Transactions on Communications*, vol. 68, no. 6, pp. 3640-3653, Jun. 2020.
- **Hao Ye**, Le Liang, Geoffrey Ye Li, and Biing-Hwang Juang, "Deep learning based end-to-end wireless communications with conditional GAN as unknown channel," *IEEE Transactions on Wireless Communications*, vol. 19, no. 5, pp. 3133-3143, May 2020.
- Le Liang, **Hao Ye**, Guanding Yu, and Geoffrey Ye Li, "Deep learning based wireless resource allocation with application to vehicular networks," *Proceedings of the IEEE*, vol. 108, no. 2, Feb. 2020.
- Le Liang, **Hao Ye**, and Geoffrey Ye Li, "Spectrum sharing in vehicular networks based on multi-agent reinforcement learning," *IEEE Journal on Selected Areas in Communications*, vol. 37, no. 10, pp. 2282-2292, Oct. 2019.
- **Hao Ye**, Geoffrey Ye Li, and Biing-Hwang Juang, "Deep reinforcement learning based resource allocation for V2V communications," *IEEE Transactions on Vehicular Technology*, vol. 68, no. 3, pp. 3163-3173, Mar. 2019. (*Web of Science* highly cited paper, once the most popular article of all papers in the journal)
- Zhijin Qin, **Hao Ye**, Geoffrey Ye Li, and Biing-Hwang Juang, "Deep learning in physical layer communications," *IEEE Wireless Communication Magazine*, vol. 26, no. 2, pp. 93-99, Mar. 2019. (*Web of Science* highly cited paper)
- Le Liang, **Hao Ye**, and Geoffrey Ye Li, "Towards intelligent vehicular networks: A machine learning framework," *IEEE Internet of Things Journal*, vol. 6, no. 1, pp. 124 – 135, Feb. 2019.

- **Hao Ye**, Le Liang, Geoffrey Ye Li, Joonbeom Kim, Lu Lu, and May Wu, "Machine learning for vehicular networks," *IEEE Vehicular Technology Magazine*, vol. 13, no. 2, pp. 94-101, Jun. 2018. (**Web of Science highly cited paper, once the most popular article of all papers in the journal from IEEE Xplore**)
- **Hao Ye**, Geoffrey Ye Li, and Biing-Hwang Juang, "Power of deep learning for channel estimation and signal detection in OFDM systems," *IEEE Wireless Communication Letter*, no. 7, pp.114-117, Feb. 2018. (**Once among top 100 documents downloaded of all papers in 300 journals in IEEE Xplore, once the most popular article of all papers in the journal.**)

Conferences:

- Wang, Kexin, **Hao Ye**, Le Liang, and Shi Jin, "Sparse Graph Neural Networks for Two-Timescale Wireless Resource Allocation," in *Proc. IEEE Globecom Workshops*, pp. 335-340. Dec. 2023.
- Tribhuvanesh Orekondy, Pratik Kumar, Shreya Kadambi, **Hao Ye**, Joseph Soriaga, and Arash Behboodi, "WiNeRT: Towards Neural Ray Tracing for Wireless Channel Modelling and Differentiable Simulations." *International Conference on Learning Representations (ICLR)*, May 2023, pp. 1-10.
- **Hao Ye**, Geoffrey Ye Li, and Biing-Hwang Juang, "Deep over-the-air computation," *IEEE Global Communications Conference*, Dec. 2020, pp. 1-6.
- Ziyang He, Liang Wang, **Hao Ye**, Geoffrey Ye Li, and Biing-Hwang Juang, "Resource allocation based on graph neural networks in vehicular communications," *IEEE Global Communications Conference*, Dec. 2020, pp. 1-6.
- **Hao Ye**, Geoffrey Ye Li, and Biing-Hwang Juang, "Bilinear convolutional auto-encoder based pilot-free end-to-end communication systems," in *Proc. IEEE International Conference on Communications*, Jun. 2020, pp. 1-5.
- **Hao Ye**, Le Liang, and Geoffrey Ye Li, "Circular convolutional auto-encoder for channel coding," in *Proc. IEEE International Workshop on Signal Processing Advances in Wireless Communications*, Jul. 2019, pp. 1-5.
- Le Liang, **Hao Ye**, and Geoffrey Ye Li, "Multi-agent reinforcement learning for spectrum sharing in vehicular networks," in *Proc. IEEE International Workshop on Signal Processing Advances in Wireless Communications*, Jul. 2019, pp. 1-5.
- **Hao Ye**, Geoffrey Ye Li, Biing-Hwang Juang, and Kathiravetpillai Sivanesan, "Channel agnostic end-to-end learning based communication systems with conditional GAN," in *Proc. IEEE Globecom Workshops*, Dec. 2018, pp. 1-5.
- Xiaoli Ma, **Hao Ye**, and Geoffrey Ye Li, "Learning assisted estimation for time-varying channels," in *Proc. IEEE International Symposium on Wireless Communication Systems*, Aug. 2018, pp. 1-5.
- **Hao Ye** and Geoffrey Ye Li, "Deep reinforcement learning based distributed resource allocation for V2V broadcasting," in *Proc. IEEE International Wireless Communications and Mobile Computing Conference*, Jun. 2018, pp. 440-445.
- **Hao Ye** and Geoffrey Ye Li, "Deep reinforcement learning for resource allocation in V2V communications," in *Proc. IEEE International Conference on Communications*, May 2018, pp. 1-6.

- **Hao Ye** and Geoffrey Ye Li, “Initial results on deep learning for joint channel equalization and decoding,” in *Proc. IEEE Vehicular Technology Conference Workshop on “From 4G to Beyond 5G (B5G) Systems”*, Sep. 2017, pp. 1-5.
- **Hao Ye** and Liangrui Peng, “Word level script recognition for Uighur document mixed with English script,” in *Proc. ACM International Workshop on Multilingual OCR*, Aug. 2013, pp. 1-5.

PROFESSIONAL SERVICES

- Editor: IEEE Transactions on Wireless Communications, 2024—present
- Workshop Co-Chair: IEEE Wireless Communications and Networking Conference Workshop: Model-Driven Deep Learning for 6G, 2024
- Track Chair: Vehicular Technology Conference - Fall, 2022
- Editor: Machine Learning in Communications and Networks Series in IEEE Journal on Selected Areas in Communications, 2020 – 2022
- TPC Member: IEEE Global Communications Conference 2023, 2022, 2021
- TPC Member: IEEE International Conference on Communications, 2021

REVIEWERS

- IEEE Journal on Selected Areas in Communications
- IEEE Journal of Selected Topics in Signal Processing
- IEEE Transactions on Wireless Communications
- IEEE Transactions on Communications
- IEEE Transactions on Vehicular Technology
- IEEE Internet of Things Journal
- IEEE Vehicular Technology Magazine
- IEEE Communication Magazine
- IEEE Wireless Communication
- IEEE Transactions on Cognitive Communications and Networking
- IEEE Communication Letters
- IEEE Wireless Communication Letters