Yiming Li

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Research Interests

Wireless networks and **digital twins**, RF signal mapping, open-source 5G prototyping (**OAI/srsRAN**), edge learning, and embedded sensing.

Education

Ph.D. in Electrical and Computer Engineering (Advisor: Prof. Tingjun Chen), *Duke University* | NC, USA — *2024-present*

M.S. in Electrical and Computer Engineering, *Duke University* | NC, USA — *2021-23*

B.Eng. in Computer Science and Information Engineering, *Providence University* | Taiwan — *2015-19*

Honors & Awards

Duke ECE Conference Travel Fellowship, *Duke University* — *Oct 2024*

Scholarship; [ranked 1st] , *Computer Science and Information Engineering, Providence University* — *June 2018*

Linux Service Integration IT Expert, *Granted by Computer Skills Foundation, Taiwan* — *June 2018*

Collegiate Programming Examination (CPE) – Top 1.1% (28/2532) — *Dec 2017*

Academic Experience

Research Assistant, *Duke University* | NC, USA — *Dec 2022 - current*

- Developed an LTE information measurement system for cross-platform data collection (Samsung, Pixel, Raspberry Pi), gathering over **50,000+ data points**.
- Developed an automated framework that seamlessly integrates three open-source tools: **OpenStreetMap (geographic databases)**, **Blender (computer graphics)**, and **Sionna (ray tracing)**, enabling the efficient generation of large-scale 3D building maps and ray tracing models.
- Built a wearable embedded sensing platform with a **customized IEEE 802.15.4 protocol** enabling real-time, ultra-low-loss/jitter wireless transmission, complemented by on-device NAND-flash storage for reliable lossless recording and later data export.
- Practical experience deploying and debugging **OAI/srsRAN** with 5G Core networks and **COTS UEs** (smartphones and 5G modules).

Publications

1. **Li, Y.**, Gao, Z., Palathinkal, J.R., Ghosh, M. and Chen, T., "A Generalized Deep Learning Model for Signal Coverage Prediction in the CBRS Band," *IEEE DySPAN'25*.
2. **Li, Y.**, Li, Z., Gao, Z. and Chen, T., "Geo2SigMap: High-fidelity RF signal mapping using geographic databases," *IEEE DySPAN'24*.
3. **Li, Y.**, Sun, J., Liu, Y., Zhang, Y., Li, A., Chen, B., Roth, H.R., Xu, D., Chen, T. and Chen, Y., "Federated black-box prompt tuning system for large language models on the edge," *ACM MobiCom'24*.

Professional Experience

Teaching Assistant - NSF Athena Outreach Project, *Cary Academy* | NC, USA — *Spring 2024*

Teaching Assistant - NSF Athena Outreach Project, *Hillside High School* | NC, USA — *Fall 2023*

Skills

Programming Python, C/C++, Embedded Systems, Bash, Git, LaTeX, Vim

Software Linux, GNU Radio, PyTorch, Docker