Fanyi Meng

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Education

The Chinese University of Hong Kong (Shenzhen) (CUHKSZ) 2023 – Present

M.Phil student in Computer and Information Engineering (CIE), expected March 2025

Southern University of Science and Technology (SUSTech) 2019 – 2023

B.S. in Electrical and Electronic Engineering (EEE), Communication Engineering

- GPA: **3.47 / 4** (85 / 100)

Experience

Southern University of Science and Technology Oct. 2020 – Feb. 2023

Undergrad Research Assistant Supervisor: Rui Wang

Project with **HONOR**

- Used **MATLAB's WLAN Toolbox** for simulation of the Distributed Coordination Function (DCF) within the Wi-Fi MAC layer.
- Used **NS-3** to analyze the Enhanced Distributed Channel Access (EDCA) mechanism in 802.11ac, focusing on throughput and latency.
- Refined EDCA parameters to improve overall **QoS** performance in Channel Allocation for Wi-Fi networks.

Shenzhen Research Institute of Big Data Mar. 2023 – Present

Research Assistant Supervisor: Guangxu Zhu

DIIS Laboratory Internal Project

- Extracted **Channel State Information (CSI)** from Wi-Fi signals on Intel 5300 NIC, ESP32, and Router RT-AC86U.
- Built a Wi-Fi Sensing System for data collection, model training, and function visualization.
- Used **BERT**-based neural network to address **packet loss** challenges in Wi-Fi Sensing tasks.
- Employed three Intel 5300 NICs for sub-2-second latency in real-time human **tracking and localization**.

Project with **China Mobile**

- Used **Sionna** to simulate **ISAC** performance, focusing on localization error.
- Using **Sionna** and **AirSim** to jointly simulate communication and **multi-modal sensing(Lidar, Camera)**.

Guangdong Basic and Applied Basic Research Foundation Project

- Using Multi-beam RSRP to calibrate the ray-tracing parameters in Sionna.
- Using Sionna to simulate RIS and ISAC in 6G networks.
- Optimizing 6G network performance using a data-driven approach.

Publications

⋆ **Finding the Missing Data: A BERT-inspired Approach Against Package Loss in Wireless Sensing**
Zhao, Zijian, Tingwei Chen, **Fanyi Meng**, Hang Li, Xiaoyang Li, and Guangxu Zhu
IEEE INFOCOM DeepWireless Workshop 2024

⋆ **Coverage Analysis for Air-Ground Integrated-Sensing-and-Communication Networks**
Yihang Jiang, **Fanyi Meng**, Xinhao Li, Xiaoyang Li, Guangxu Zhu, Kaifeng Han, Qingjiang Shi
International Conference on Ubiquitous Communication 2024 (Accepted)

Skills

- Programming Languages: Python > MATLAB > C++ > Labview = Java
- Platforms: Ubuntu 20.04, Debian 10, USRP X410

- Tools: Sionna, Tensorflow, NS-3, PyTorch, AirSim, ROS

♡ Honors and Awards

3rd Prize, the First Wi-Fi Sensing Contest — Dec. 2023
Advanced to the semifinals in International Algorithm Competition of Pazhou Lab — Nov. 2023

ℹ Miscellaneous

- Website: `http://fanyimeng0.github.io`
- GitHub: `https://github.com/fanyimeng0`
- Languages: English - TOEFL 92, Mandarin - Native speaker