LIHAN ZHENG

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EDUCATION

Shanghai Jiao Tong University (SJTU) *June 2026 (expected)*
B.E. in Information Engineering (in progress), ICISEE
GPA: 3.94/4.3; Score: 91.24/100; Rank: 8/132, 6%; Member of the Communist Party of China
Related courses: *Principles of Communications, Digital Signal Processing, Principles Wireless Communication and Mobile Networks, Signals and Systems, Calculus, Linear Algebra, Discrete Mathematics*

RESEARCH INTERESTS

My research interests lie in the field of physical layer technologies in wireless communications, including *OTFS, channel modeling and massive MIMO systems*. I am also keen to explore the integration of artificial intelligence and wireless communication technologies, particularly leveraging machine learning techniques to optimize resource allocation and improve adaptive strategies. My goal is to contribute my knowledge toward the digital and intelligent evolution of wireless communications in the 6G era.

EXPERIENCE

Research on Delay Doppler Communication *June 2025- Present*
Supervisor: Assoc. Prof. Shu Sun *Summer Internship, SJTU*

Conducting theoretical study and simulation-based research on Orthogonal Time Frequency Space (OTFS) modulation in the delay-Doppler domain for high-mobility wireless communications.

Novel Hybrid Precoder Based on Deep Reinforcement Learning *Feb 2025 - May 2025*
Supervisor: Assoc. Prof. Qingqing Wu *Electronic Engineering Talent Development Program, SJTU*

- Conducted literature review on related research topics and reproduced several relevant GitHub projects.
- Proposed an innovative hybrid precoder architecture to optimize spectral efficiency and BER.
- Applied (MA)DDPG and SAC to design the hybrid precoder based on deep reinforcement learning.

Multimodal Intelligent Robotic Assistant *May 2025*
Supervisor: Sr. Eng. Pengzhi Chu *Course Project for AI1101, SJTU Student Innovation Center*

- Built a Gradio interface for voice, text, and image input with speech output, context memory, and device control (robotic arm & Micro:bit).
- Used Qwen-Plus to understand instructions and trigger actions like weather queries, DB operations, robot control, and image understanding via Qwen-VL.
- Implemented Function Calling and MCP in Qwen Agent for tool integration.

Smart Driver Monitor System Based on IoT *July 2024*
Supervisor: Assoc. Prof. TAN Wee Kek *Group Project for NUS SoC Summer Workshop*

- Developed a sensor network and processed fatigue-related data using RPi and ESP32 with MQTT for data transmission.
- Built a website for data visualization and video monitoring with WebSocket and MJPG-Streamer.

AWARDS

National Scholarship, awarded by Ministry of Education, PRC *Dec 2024*
The Second Prize Scholarship, awarded by Shanghai Jiao Tong University *Dec 2024*
The Third Prize Scholarship, awarded by Shanghai Jiao Tong University *Dec 2023*
Three Good Student, awarded by Shanghai Jiao Tong University *Oct 2023*
Excellent League Member, awarded by Shanghai Jiao Tong University *May 2023*