Chenqing Ji

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Education

Southern University of Science and Technology (SUSTech) — Shenzhen, China

M.Sc. in Electronic Science and Technology; **GPA: 3.74/4.00; Weighted Score: 92.61;** — *Sept. 2023 – Jul. 2026*

B.Sc. in Communication Engineering; **GPA: 3.77/4.00; Weighted Score: 90.6;** — *Sept. 2019 – Jul. 2023*

Supervised by Prof. Rui Wang (Editor of IEEE WCL, IEEE OJ-COMS), I focus on **the experimental study of passive UAV trajectory tracking via Cellular downlink signals and mmWave sensing channel modeling for wireless sim2real gesture recognition.**

Experience

Beijing ZengYi HuiChuang Technology Co., Ltd. (NI's Official Partner) — Shenzhen, China

Research Intern — *Aug. 2022 – Sept. 2022*

- Working on wireless communication combined with artificial intelligence (AI).
- Mainly helped the company advance a project on modulating signal recognition based on USRP, using neural networks to achieve high recognition accuracy of the signals with different modulation modes. Internship Certificate: [PDF]. The outstanding performance certificate is here: [PDF].

Publications

[1] **Chenqing Ji**, Qionghui Liu, Jiahong Liu, Chao Yu, Yifei Sun, Rui Wang, and Fan Liu. "Doppler-Based Multistatic Drone Tracking via Cellular Downlink Signals," has submitted to *2025 IEEE Global Communications Conference (GLOBECOM)*. Paper (available after acceptance)

[2] **Chenqing Ji**, Jiahong Liu, Qionghui Liu, Yifei Sun, Chao Yu, and Rui Wang. "An Experimental Study on Fine-Grained Multistatic Sensing of UAV Trajectory via Cellular Downlink Signals," has submitted to *IEEE Wireless Communications Letters*. Paper (available after acceptance) | Dataset

[3] Zhenyu Ren, **Chenqing Ji**, Chao Yu, Wanli Chen, and Rui Wang. "Computer Vision–assisted Wireless Channel Simulation for millimeter-wave Human Motion Recognition," in *Journal of Radars*, in press. doi: 10.12000/JR24101. Paper | Project Page | Video Page

[4] Zhenyu Ren, Guoliang Li, **Chenqing Ji**, Chao Yu, Shuai Wang, and Rui Wang. "CASTER: A Computer-Vision-Assisted Wireless Channel Simulator for Gesture Recognition," in *IEEE Open Journal of the Communications Society*, vol. 5, pp. 3185-3195, 2024. doi: 10.1109/OJCOMS.2024.3398016. Paper

[5] Kehan Wu, Renqi Chen, Haiyu Wang, **Chenqing Ji**, Jiayuan Zhu, and Guang Wu. "Passive Respiration Detection via mmWave Communication Signal under Interference," *2024 IEEE Wireless Communications and Networking Conference (WCNC)*, Dubai, United Arab Emirates, 2024, pp. 1-6, doi: 10.1109/WCNC57260.2024.10570770. Paper

[6] **Chenqing Ji**, Chenlong Xue, Gina Jinna Chen, Yitong Guo, Dan Luo, and Perry Ping Shum. "A Fluorescence Resonance Energy Transfer-Based Molecular Probe for Cisplatin Detection," *2023 IEEE 8th Optoelectronics Global Conference (OGC)*, Shenzhen, China, 2023, pp. 156-160, doi: 10.1109/OGC59456.2023.10314627. Paper

[7] **Chenqing Ji**, Yujie Lu, Yongjuan Shi, and Guang Wu. "A Fragmented Target Recognition System Based on Zero-Shot Learning," *2023 IEEE International Conference on Consumer Electronics (ICCE)*, Las Vegas, NV, USA, 2023, pp. 01-06, doi: 10.1109/ICCE56470.2023.10043466. Paper

Awards & Achievements

- 2023∼2024 Southern University of Science and Technology **Outstanding Graduate Students Award**.
- **Leader** for Guangdong University Students' Science and Technology Innovation Cultivation Special Fund ("Climbing Plan" Special Fund), 2024∼2025 **(Funding: 20,000 RMB)**.
- 2023 Southern University of Science and Technology Graduate Academic **Grand-Class** Scholarship.
- **Second Prize** in the 17th "Challenge Cup" Guangdong University Student Extracurricular Academic Science and Technology Works Competition, 2023.

- 2023 **Excellent Graduate of Undergraduate** for exceptional performance in the Department of Electronic and Electrical Engineering, SUSTech.
- 2021∼2022 Southern University of Science and Technology Outstanding Student **Third-Class** Scholarship.
- **Leader** for Guangdong University Students' Science and Technology Innovation Cultivation Special Fund ("Climbing Plan" Special Fund), 2021∼2022 **(Funding: 15,000 RMB)**.
- **Third Prize** (as team leader) in the Guangdong Division of the National Undergraduate Electronics Design Contest, 2021.

Skills

Outstanding Courses (research-related): Computer Networks (Grade: 97 (A+)); Design of Modern Communication System (Grade: 98 (A+), Rank: 1/30); Antennas and Radio Propagation (Grade: 100 (A+), Rank: 1/40); Information Theory and Coding (Grade: 99 (A+)); Communication Principles (Grade: 95 (A)); Data Structures and Algorithm Analysis (Grade: 99 (A+)); Wireless Network and Mobile Computing (Grade: 96 (A+)); Fundamentals of Wireless Communications (Grade: 95 (A)); Sensors and Applications (Grade: 100 (A+)).

Programming Languages: Python, MATLAB, C/C++, Java

Technologies: PyTorch, Linux/Ubuntu, Git/GitHub, UHD/USRP, 60GHz Sivers

Writing: LaTeX, Markdown, Website (HTML, CSS, JavaScript)

English: CET-4, CET-6

Projects

Experimental Study on Passive UAV Trajectory Tracking via LTE Downlink Signals | Dataset

- A Doppler-only multistatic passive unmanned aerial vehicles (UAVs) tracking system utilizing downlink long-term evolution (LTE) signals. The performance of UAV trajectory tracking is demonstrated by experiments on a low-altitude two-dimensional plain.
- Our experiments demonstrated that the tracking errors are below 50cm for 90% of the trajectory, when the distance between the UAV and sensing receivers is below 30m. If the initial location of the UAV is unknown, by solving a minimum mean-squared error optimization problem, the complicated trajectories can be tracked with 90% errors below 90 cm.

Simulation Meets Reality in Wireless Channel (CASTER) | Paper | GitHub | Project Page

- An open-source platform for wireless channel simulation, human/hand pose extraction, gesture spectrogram generation, and real-time gesture recognition based on millimeter-wave passive sensing and communication systems.

References

Prof. Rui Wang, Associate Professor, Department of Electronic and Electrical Engineering (EEE), Southern University of Science and Technology, Email: wang.r@sustech.edu.cn.