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; **Rank: 2/50, Top 5%** — *Sept. 2023 – Jul. 2026*

B.Sc. in Communication Engineering; GPA: 3.77/4.00; **Rank: 6/33** — *Sept. 2019 – Jul. 2023*

Supervised by Prof. Rui Wang (Editor of IEEE WCL, IEEE OJ-COMS), focusing on **sensing channel modeling and the experimental LTE-based passive radar system for multi-link cross-sensing the trajectory of the unmanned aerial vehicle (UAV).**

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].

Publications

[1] 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 **(Invited paper, Chinese top journal for radar system)**. Paper | Project Page | Video Page

[2] 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 **(Current impact factor: 7.9, JCR Q1)**.

Paper | GitHub | Project Page **(Includes 3 demo videos. It is highly recommended to watch these for a quick understanding of my paper. If the page loads slowly within China, you can try accessing http://lasso.eee.sustech.edu.cn/caster/ instead.)**

[3] Kehan Wu, Renqi Chen, Haiyu Wang, **Chenqing Ji**, Jiayuan Zhu, and Guang Wu. "Passive Respiration Detection via mmWave Communication Signal under Interference," in 2024 IEEE Wireless Communications and Networking Conference (WCNC) **(CCF-C, one of the top conferences in the field of communications)**.

[4] **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," in 2023 IEEE 8th Optoelectronics Global Conference (OGC).

[5] **Chenqing Ji**, Yujie Lu, Yongjuan Shi, and Guang Wu. "A Fragmented Target Recognition System Based on Zero-Shot Learning," in 2023 IEEE International Conference on Consumer Electronics (ICCE).

Awards & Achievements

- The Excellent Graduate Teaching Assistant for the Fall Semester in 2023.
- **Core Member** for Guangdong University Students' Science and Technology Innovation Cultivation Special Fund ("Climbing Plan" Special Fund), 2023∼2024 **(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.

- **Core Member** for Guangdong University Students' Science and Technology Innovation Cultivation Special Fund ("Climbing Plan" Special Fund), 2022∼2023 **(Funding: 20,000 RMB)**.
- 2021-2022 Southern University of Science and Technology Outstanding Student **Third-Class** Scholarship.
- Performed **exceptionally well** and contributed significantly to the research and development of the projects during the internship at **Beijing ZengYi HuiChuang Technology Co., Ltd. (NI's Official Partner)** in August, 2022. The outstanding performance certificate is here: [PDF].
- **Core Member** for Guangdong University Students' Science and Technology Innovation Cultivation Special Fund ("Climbing Plan" Special Fund), 2021∼2022 **(Funding: 20,000 RMB)**.
- **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, Java

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

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

English: CET-6

Projects

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.
  - Submodules mediapipe_spectrogram and testZED: Developed algorithms for keypoint extraction from video streams and used a primitive-based channel model to generate simulated data, addressing the data collection issue in wireless sensing.
  - Submodule CASTER_classification: Implemented a Simulation-to-Reality transfer learning strategy using ResNet18 and adversarial discriminative domain adaptation (ADDA) for wireless gesture recognition. This approach improved real-world dataset accuracy from 83.0% to 96.5%.
  - Submodule RxRealTime_GUI: Implemented real-time gesture recognition based on millimeter-wave passive sensing and communication systems, using USRP and 60GHz Sivers phased array.

Extracurricular Activities

- Teaching Assistant for Information Theory and Coding (EE411) in SUSTech *2024 Fall Semester*
- Teaching Assistant for Design of Modern Communication Systems (EE312) in SUSTech *2024 Spring Semester*
- Teaching Assistant for Wireless Communications (EE313) in SUSTech *2023 Fall Semester*

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.