

Ruoshen Mo

莫若染

✉ rmo008@ucr.edu

📁 morrishohoho.github.io

EDUCATION

University of California, Riverside

Ph.D. in Computer Science

Riverside, USA

2024-present

Sichuan University

B.Eng. in Computer Science and Technology

Chengdu, China

2020-2024

RESEARCH EXPERIENCE

C-V2X Network Measurement

Research Intern

Riverside, USA

March 2024 - Present

Advisor: Prof. Zhaowei Tan, University of California, Riverside and Prof. Hang Qiu, University of California, Riverside

- We discovered that there is a throughput gap between theory and reality in C-V2X.
- We built a full stack measurement testbed to collect the network trace of C-V2X in different configurations.
- We plan to publish a dataset on the performance of C-V2X in real-world devices.

Attack on C-V2X with Unprotected Messages

Research Intern

Riverside, USA

July 2023 - February 2024

Advisor: Prof. Zhaowei Tan, University of California, Riverside

- We discovered vulnerabilities in C-V2X protocols specified in 3GPP Rel.16: some messages are unprotected and form the basis of communication.
- We have developed an attacker prototype that exploits these vulnerabilities and proposed several potential countermeasures.
- We plan to conduct further experiments based on SDR in future work.

Lightweight V2V Network Enabled by Optical Wireless Communication

Research Intern

Chengdu, China

November 2022 - August 2023

Advisor: Prof. Yanbing Yang, Sichuan University and Prof. Zhengguo Sheng, University of Sussex

- We established a lightweight V2V network framework, integrating communication and sensing concurrently.
- We employed Raptor Codes in V2V networks to overcome severe packet loss for the first time, enhancing the overall performance of the framework.
- We innovated in proposing a status sensing algorithm to fast detect status changes of adjacent vehicles.
- We developed a prototype using low-cost COTS devices for conducting experiments and evaluations.

TEACHING EXPERIENCE

Rapid Development of AIoT system based on HarmonyOS

Teaching Assistant, Sichuan University

Chengdu, China

2023 Spring

PUBLICATIONS

VehicleTalk: Lightweight V2V Network Enabled by Optical Wireless Communication and Sensing

Yang Song, **Ruoshen Mo**, Pinpin Zhang, Chenchen Wang, Zhengguo Sheng, Yimao Sun, Yanbing Yang

IEEE 99th Vehicular Technology Conference (VTC), 2024

PATENTS

Internet of vehicles system based on common LED car light optical communication and implementation method

Ruoshen Mo, Yanbing Yang, Yang Song, Yanbo Wang, Jun Tao, Xinyu Lv, Jifei Zhu, Yimao Sun

Patent: CN116961748A

HONORS

- The First Prize Scholarship of Sichuan University - 2021,2022,2023
- Excellence Students of Sichuan University - 2023

SKILLS

Programming Language	C/C++, Python, JAVA
Familiar with	ESP32, STM32, FreeRTOS, L ^A T _E X, MatLab
Languages	Chinese (Native), English (Fluent)