Shenghan (Eric) ZHENG

7179 Magnolia Ave, Riverside, CA 92504 | zhengshh11@gmail.com | +1 (951) 544-7127 | https://github.com/ZhengShenghan

EDUCATION

University of California, Berkeley, Berkeley, CA Aug. 2021 – Jun. 2022
Exchange student, College Of Engineering
- GPA: 3.83/4.0
- Core Course: Algorithms, Artificial Intelligence, Computer Security, Optimization, Software Engineering

ShanghaiTech University, Shanghai, China Sep. 2019 – Jun. 2023
Bachelor of Science, Computer Science and Technology
- GPA: (Last 3 semesters): 3.75/4.0 | GPA (Major): 3.6/4.0 | GPA 3.54/4.0

University of California, Irvine, Irvine, CA Jun. 2022 – Sep. 2022
School of Engineering, UCInspire (International Student Program Immersive Research Experience)
- GPA 4.0/4.0
- 10 week faculty-guided individual study course (details below in *Experiences* and *Projects* section)

University of California, Riverside, Riverside, CA Sep. 2023 – Jul. 2025(Expected)
Master of Science, Computer Science
- GPA 3.90/4.0
- Core Course: Advanced Operating System, Advanced Computer Architecture, Compiler, Software Testing, Software Security, Deep Learning

RESEARCH INTEREST

Cybersecurity and system security. Software testing and verification. Bug finding and patch generation with LLM.

PUBLICATION

Man, K., Wang, Z., Yu, H., **Zheng, S.**, Zhou, X., Cao, Y, Qian, Z. *SCAD: Towards a Universal and Automated Network Side-Channel Vulnerability Detection.* IEEE S&P 25.

PREPRINT & UNDER SUBMISSION

Zheng, S., Zhu, S., Yu, H., Li, X., Man, K., Qian, Z., Krishnamurthy S.V. *NeuroMerge: ML-Guided State Merging for Efficient Symbolic Execution. (In submission)*

Bai, X., Ye, H., **Zheng, S.**, Zhang, F., Hu H., Li Z. *NCFuzz: Configuration-guided Network Service Fuzzing. (In submission)*

PROJECTS

UC Davis, Davis, CA Oct. 2024 – Dec. 2024

Student Researcher, UCD Security Lab | PI: Prof. Hao CHEN

Topic: Testing Harness Generation of Lib Code with LLM

Many simple bugs in lib function are not detected because they are difficult to be covered by unit test and fuzzing test. One solution is to provide testing harness for the function. Our project aims to use LLM to generate reliable and usable testing harness for lib code for bug detection.
- **Skills involved**: LLM, prompt engineering, static analysis.

UC Irvine, Irvine, CA Jun. 2022 – Sept. 2023

Student Researcher, DSP (Data-driven Security and Privacy) Lab | PI: Prof. Zhou LI

Topic: packet-logic-based DOS attack in Windows 10

This project aims to conduct a DOS attack that can work on most of the Windows releases. By reverse engineering, we found out that the basic logic and structures of packet handling have remained unchanged for many years. The process

of looking up and editing packets' metadata could potentially be leveraged to perform DOS with the offline effort to crack critical values in the structures related to packet storage.

- **Skills involved**: WinDBG, QEMU, Network environment setting, network measurement, IDA Pro, Ghidra, scripting, C/C++, Socket programming.

SERVICES

Artifact Evaluation Committee

- NDSS: 2025
- EuroSys: 2025
- Usenix: 2025

Registered Reviewers

- EAI SecureComm: 2024
- IEEE T-IFS: 2024
- Computer Networks: 2024, 2025

External Reviewers

- CCS: 2024
- NDSS: 2025

TEACHING

CS181: **Artificial Intelligence**, ShanghaiTech, Course Prof. Kewei Tu Sep. 2022 – Mar. 2023

- Leading discussions, answering Piazza questions, holding office hours, preparing and reviewing homework and exam projects for 120 students.

EXPERIENCES

Shanghai Center of brain science and brain-inspired technology, Shanghai, China

Student Developer, Cognitive Intelligence Research Group | Prof. Yi ZHOU Nov. 2020 – Aug. 2021

- Develop tools based on knowledge engineering. Focus on knowledge graph building, label recommendation, and model tuning.

UC Irvine, Irvine, CA

Student Researcher, DSP (Data-driven Security and Privacy) Lab | PI: Prof. Zhou LI Jun. 2022 – Sep. 2022

- Selected by faculty advisor to continue research project into Fall season after end of research internship.
- Work on DNS protocol-related problems in Linux and Windows. Learn to build up DNS resolvers and servers.

UC Riverside, Riverside, CA Aug. 2023 – Sept. 2024

Graduate Student Researcher, UCR Security Lab

- Work on the intersection between machine learning and symbolic execution to enhance the performance(bug detection and execution speed) of symbolic engine.

UC Davis, Davis, CA Oct. 2024 – Now

Research Internship, UCD Security Lab | PI: Prof. Hao CHEN

- Work on the LLM-directed fuzzing for open-source libraries.

AWARDS AND HONORS

- 2nd prize in Mathematics Olympiad, Zhejiang Province(Aug. 2017)
- 2nd prize in Mathematics Olympiad, Zhejiang Province(Aug. 2018)
- Contribution to *The Singing Flow* research project at University of Oxford and Goldsmiths, University of London (Sep. 2022)
- Outstanding Undergraduate, ShanghaiTech University(Nov. 2022)
- Distinguished Dean's Award, UC Riverside(Sep. 2023)
- 1st place in Butterfly Open Match, Los Angeles Table Tennis Association(Jan. 2024)
- 1st place in Butterfly Open Match, Los Angeles Table Tennis Association(Mar. 2024)

- 1st place in Butterfly Open Match, Los Angeles Table Tennis Association(July. 2024)
- Deans Fellow Award, UC Riverside(Sep. 2024)
- Graduate Fellowship, UC Riverside(Sep. 2024)

TECHNICAL STRENGTHS

- **English Fluency**: Chinese (Native), English (Fluent), TOEFL: 107 [R28/L29/S24/W26], GRE: [V154/Q168/AWA3.5]
- **Computer Skills**: python, assembly code, docker, scapy, KLEE, pytorch, C/C++, virtual machines, MATLAB, IDA, WinDBG, LLM, LLVM, LATEX, gcc, gdb, AFL, gcov
- **Math**: Linear Algebra, Mathematical Analysis, Partial Differential Equation, Abstract Algebra, Probability, Calculus

EXTRACURRICULAR ACTIVITIES

- **Activities**: Math Olympiads, Table tennis pro, Street dance, Guitar and flute player, Bodybuilder
- **Volunteer**: Berkeley Project Day, Social Practice Project, Industry Practice Project