

# Richard Liu

Undergraduate student at UIUC with a passion in cybersecurity, in particular in embedded systems, reverse engineering, and emulation.

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## SKILLS AND COMPETENCIES

Reverse engineering	QEMU	Bash
Ghidra	C	Emacs
GDB	Python	Linux

## EXPERIENCE

### **Sandia National Labs, Albuquerque, NM — R&D Undergraduate Intern**

MAY 2023 - PRESENT

Reverse engineered embedded systems with Ghidra and documented the findings. Performed dynamic analysis through creative use of diagnostic memory primitives and crash vectors. Performed low level binary exploitation.

### **QEMU — Google Summer of Code**

JUNE 2022 - SEPTEMBER 2022

Developed a snapshot/restore fuzzer for QEMU. Integrated Libfuzzer test harness and coverage information from within QEMU.

### **Embedded Systems Research — SPRAI @ UIUC**

APRIL 2022 - MAY 2022

Worked with graduate students as part of SPRAI (Security and Privacy Research at Illinois). Wrote a paper on feasibility of snapshot fuzzing in QEMU.

### **SIGPwny, UIUC — Club Admin**

AUGUST 2023 - PRESENT

Led our school's cybersecurity club in various competitions, such as eCTF, MITRE's annual embedded security competition, and CSAW, a national CTF for undergraduates.

## PUBLICATIONS

(None)

## EDUCATION

**University of Illinois at Urbana-Champaign, Champaign, IL** — *B.S. in Mathematics & Computer Science*

AUGUST 2021 - MAY 2024 (ANTICIPATED)

4.0/4.0 GPA

## PROJECTS

**UIUC Apartments** — *Apartment hunting website*

Wrote web scraping tools in Python to aggregate local apartment information. Leveraged GCP Cloud Functions and PostgreSQL for the backend.