

Richard Liu

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

EXPERIENCE

Battelle Memorial Institute, Columbus, OH — *Cyber Security Intern*

MAY 2024 - AUGUST 2024

Leveraged hardware capabilities to develop fuzz testing tools using Python to discover vulnerabilities. Reverse engineered firmware on mobile chipsets. Gained an in-depth understanding of the bluetooth protocol stack.

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

MAY 2023 - DECEMBER 2023

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

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.

SIGPwny, UIUC — *Club Admin*

AUGUST 2022 - 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.

EDUCATION

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

AUGUST 2021 - MAY 2024

3.9/4.0 GPA

M.S. in Computer Science — *University of Illinois at Urbana-Champaign*

AUGUST 2024 - MAY 2026 (expected)

SKILLS

Reverse engineering
Binary exploitation
Ghidra
GDB
Python
C

AWARDS

eCTF: Led UIUC team to second place in nationwide embedded security competition

CSAW: Placed second nationwide in undergraduate division of CTF

Modeling the Future: Paper on impact of climate change on corn production, won second place nationwide

Links

Linkedin:
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