

Charles Zhao

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WORK EXPERIENCE

Lawrence Livermore National Laboratory

May – Aug 2023, 2024

Cybersecurity Intern, 40 hrs/wk

Livermore, CA

- Improved development efficiency for lead developers by building unit and integration tests using Python (sqlite3, psycpg2, pytest), reducing debugging time and ensuring CI/CD compatibility.
- Built a dynamic web application for the Department of Homeland Security using the MEAN stack (MongoDB, Express, Angular, Node), delivering a scalable and efficient solution for enhanced data management.
- Developed a Python script to efficiently parse reports and identify suspicious IP addresses and domains interacting with a network, improving threat detection and network security monitoring.

EDUCATION

Virginia Tech

Blacksburg, VA

Master of Engineering in Computer Engineering

May 2025

- Developed a custom C++ stager to deploy a Sliver implant onto Windows systems while evading Microsoft Defender, using obfuscation, process injection, and dynamic API resolution.

Bachelor of Science in Computer Engineering, Major in Networking & Cybersecurity

May 2024

- Magna Cum Laude; IC CAE Scholar; SFS CyberCorps Scholar

PROJECTS

Domain Filter

Nov 2025

- Deployed a local DNS sinkhole using Pi-hole and Raspberry Pi to filter and block unwanted domains across all devices on my home network.
- Actively learning about the captured DNS queries using Wireshark and documenting my findings on GitHub.

Malicious File/URL Scanner

Jan 2024 – May 2024

- Designed and delivered a Python-based antivirus scanner for attachments and URLs, leveraging VirusTotal's API to effectively detect and mitigate malicious software embedded in emails.

Microcontroller Programming

Jan 2022 - May 2022

- Programmed a word guessing game, a burger making game, and a simple Tamagotchi game, on the TI's MSP432P401R microcontroller, using C.

CERTIFICATIONS, SKILLS & INTERESTS

- **Certifications:** CompTIA Security+
- **Skills:** Python; C++; CLI; Nmap; Wireshark; Git;
- **Interests:** Radio Frequencies; Space; Digital Self-Sovereignty; UFC; Mountains; Stocks; OSINT; Flipper Zero