Alex Zheng

Software & Network Engineer | Frederick, MD | alex.htzheng@gmail.com | (240) 751-7540 | tinycv.co/az

EDUCATION

University of California, Los Angeles (UCLA) **Los Angeles, CA**

Henry Samueli School of Engineering – B.S. Computer Science & B.S. Statistics *September 2023 - June 2027*

- **Coursework:** Data Structures & Algorithms, Computer Systems and OS, Computer Graphics Systems, Machine Learning
- **Director of Development @ UCLA Association for Computing Machinery (ACM)** - Lead a 15-person dev team maintaining core platforms for 230 officers and 1,000+ members of the largest CS student org in SoCal; oversee development of the membership portal and website (which won Best Chapter Website from a pool of 680+ international student chapters.)
- **Board Officer @ UCLA Creative Labs –** Develop club website using React & provide technical expertise to projects.

SKILLS

Coding Languages: Python, C++, Java, SQL, HTML / CSS, x86-64 Assembly, JavaScript, Golang, Bash, SysML
Technical Specialties: Networking *(TCP/IP, NAT, Reverse/Tunnel Proxies, WAN/LAN Architecture)*, Cloud Infrastructure (*AWS, OCI, Virtualization/Self-Hosting)*, Full Stack *(MERN, Golang, Django)*, Systems Engineering
Operating Systems: Windows, Linux (Ubuntu, Debian, Almalinux/RHEL), MacOS, Android, iOS

EXPERIENCE

Software Engineer Intern – Government Services and Solutions **Carlsbad, CA**

Viasat *June 2025 - Present*

- Designed and developed the **primary control and management interface** for the Next Generation Modem (NGM) - a revolutionary virtualized modem enabling on-the-go deployment on generic hardware.
- Delivered key features including a React/Next.js frontend and a Golang REST API middleware management interface with iterative v1 and v2 design leading to a full-time return offer extended after just 3 weeks.
- Actively discussing overall system design, including architecture decisions, interface definitions, and integration.

Undergraduate Student Engineer – Systems Engineer **Boston, MA**

Charles Stark Draper Laboratory *June 2024 - September 2024*

- Developed a SysML meta model for the Trident II missile GNC reentry system and created Jython scripts to query and ensure strict adherence to the meta model during development in compliance with DoD standards.
- Tailored and implemented a general Inertial Navigation Guidance simulation within the Trident II SysML model.

Software Developer Intern **Gaithersburg, MD**

National Institute of Standards and Technology - Center for Neutron Research *June 2022 - August 2023*

- *Summer 2022*: Enhanced the Python-based software SasView for analyzing Small Angle Neutron Scattering (SANS) data by integrating functionality to calculate and display Beta(Q) values and Radius of Gyration.
- *Summer 2023:* Developed a SANS model generation program in C to simulate SANS patterns of anisotropic proteins, utilizing GPU for enhanced performance. New simulation capabilities optimize the use of scarce neutron beam time and increase accuracy in deriving properties of proteins.
- Optimized atom-to-atom comparisons with multithreading, simulating 20,000 atoms in 5 minutes.

Undergraduate Researcher **Los Angeles, CA**

UCLA Aharoni Lab *November 2024 - Present*

- Develop GPU-accelerated image processing pipeline for STIMscope fluorescence imaging to enable real-time neural activity analysis at 30 FPS with CUDA-optimized algorithms to dynamically determine excitation targets
- Configured lightweight and secure reverse proxy for NAT traversal for remote access to multiple internal services

Cloud Computing Virtualization Solution (Mini-AWS) – *Creator & System Administrator*

- Set up and manage **enterprise-level server solution** with three cross-country server clusters running Linux Debian Type 1 Hypervisors, concurrently hosting 10 Ubuntu, macOS, and Windows virtual machines.
- Created **reliable and scalable 'Mini-AWS' cloud environment** using multiple virtualized Ubuntu VMs to host web applications and databases with load-balancing, replicating cloud-like services.
- Saved **$1,000 annually in personal cloud costs** and reduced ACM@UCLA's server expenses **by $3,000/year** by migrating web applications from Amazon EC2 to on-premises server clusters.

Awards: Maryland State National Merit Finalist, IB Diploma Recipient, AP Scholar with Distinction, MATHCOUNTS State Head Coach Certificate of Achievement, Vicki Van Vorst Memorial Scholarship, Anthony M. Natelli Scholarship