

Lianhao Zheng

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EDUCATION

Northwestern University

Evanston, IL

Concurrent B.A. and M.S. in **Computer Science** (GPA 3.90/4.00)

June 2026

- **Relevant Coursework:** Data Structures and Algorithms, Database Systems, Distributed Systems, Cloud Infrastructure, Operating Systems, Software Quality Testing, Computer Networking, System Security
- **Activities:** Dean's List (9/9) | QuestBridge Scholar | LEDA Career Fellow | NU Undergraduate Grant Award | CodePath Tech Fellow | Meta ABCS Fellow | Society of Asian Scientists and Engineers (Head of Cultural Events)

TECHNICAL SKILLS

Languages: Python, C, C++, TypeScript, JavaScript, Bash, SQL, HTML, Java, Rust, Go

Frameworks: Git, Node, Express, React, React-Native, MySQL, PostgreSQL, JUnit

Tools: AWS, Docker, Git, Expo Go, Figma, MongoDB, Firebase, Jira, Gradle

PROFESSIONAL EXPERIENCE

Amazon Web Services (AWS)

June 2025 – August 2025

Software Engineer Intern – Elastic Container Registry

New York, NY

- Enhanced **cross-region, cross-account container image replication** feature by implementing **backfill functionality**, enabling replication of pre-existing images and improving availability, durability, and automation for **millions of customers**
- Developed **asynchronous, event-driven** workflows in **Java**, leveraging **Lambda, DynamoDB, SQS**, and **CloudFormation** to replicate container images reliably and at scale across multiple AWS regions and accounts, supporting millions of image operations daily
- Refactored replication workflows to emit metrics for improved **CloudWatch** observability and error logging, and implemented **distributed rate limiting** for Backfill to prevent overloading downstream replication services

Prescience Lab

Mar. 2025 – June 2025

Research Assistant

Evanston, IL

- Built a distributed, DAG-based query engine in **Rust** for the **Privacy Backplane Project**, enabling real-time, policy-aware data processing across peer-to-peer nodes to be ran on Trusted Executed Environments
- Implemented a **gossip-based** peer discovery protocol with **libp2p** to support scalable, decentralized query deployment and secure communication in privacy-critical IoT environments

Olympus LLC

June 2024 – Aug. 2024

Software Engineer Intern

Chicago, IL

- Built a **Next.js, React**, and **TypeScript** full-stack application incorporating **Radix UI, Lucide-React**, and **Styled Components** to enhance UI and streamline file uploads for **200+** athlete workout templates
- Ensured reliable **REST API** integration with **PostgreSQL** and **Redis** databases via manual testing with **Postman**, and maintained agile workflows through **Jira**, sprints, and daily standups

PROJECTS

OHours | React, Vite, Tailwind CSS, Shadcn, Firebase

ohours.web.app

- Engineered an intelligent office hour queuing system with a **Non-preemptive Static Priority Scheduler** to help teaching assistants more efficiently manage questions with reduced wait time by **40%**
- Generated unit tests with **Jest** and **React Testing Library**, utilizing **Vitest** for dependency mocking to enhance test coverage, accuracy, and component reliability

CrowdScope | React Native, Expo Go, Git

- Created a mobile app delivering real-time building occupancy information through crowdsourced data
- Led a pilot study on **100+ users**, improved visual component of building profile and user login from user feedback, increasing user satisfaction scores by **30%**

NSAET | Python, Git

- Built a **Python** CLI tool to audit web domains by scanning DNS (A/AAAA), TLS/SSL versions, HTTP configurations, and geolocation using tools like **nslookup**, **openssl**, **nmap**, **telnet**, and MaxMind GeoIP database
- Generated structured JSON outputs and automated text reports to summarize security features, **latency metrics**, and **HTTPS adoption** across scanned domains