

Jason Lu

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EDUCATION

Northwestern University

B.S. and M.S. in Computer Science | Minor in Data Science and Engineering

Evanston, IL

Expected June 2025

- GPA: **3.83/4.00, Dean's List Honors (8 of 10 quarters)**
- Coursework: Networks, Distributed Systems, Data Engineering, Scalable Architectures, Operating Systems, Software Quality

EXPERIENCE

Software Engineer Intern

Jun. 2024 – Aug. 2024

Capital One

Dallas, TX

- Spearheaded a self-service application **developed from scratch** in Angular and Golang to **process 65 million** weekly asynchronous events on external event gateway platform built for auto-finance
- Integrated **automated end-to-end testing** encapsulating enterprise API micro-services built using Java Spring Boot resulting in a **production ready application** serving internal stakeholders real-time status updates
- Initiated development of manual process execution to **reprocess thousands of failed events** caused by potential cybersecurity incidents from external partners

Software Engineer

Sept. 2023 – Present

The Garage at Northwestern

Evanston, IL

- Establishing an entrepreneurship platform for **250+ alumni** as the lead engineer of an agile product team
- Deployed and integrated APIs and back-end infrastructure leveraging **AWS and Vercel's** cloud resources
- Conducted code reviews and mentored junior engineer in full-stack development practices with **scalable services**

Teaching Assistant

Mar 2023. – Present

Northwestern University

Evanston, IL

- Supported **500+ students** spanning four distinct courses: Operating Systems (CS343), Introduction to Computer Systems (CS213), Fundamentals of Data Engineering (DE200), and Scalable Software Architectures (CS310)
- Facilitated learning by delivering clear explanations on course concepts, conducting regular office hours, and evaluating student progress through assessments of assignments and examinations.

Data Scientist Intern

Jun. 2023 – Aug. 2023

Defense Counterintelligence and Security Agency

Quantico, VA

- Formulated integration of **robotic process automation** within National Industrial Security System cloud processes to streamline data form population resulting in **15 minutes saved** per operation
- Enhanced PM team's **agile software development** environment by building secure knowledge hubs in Confluence/Jira to support assessment and mitigation of risk to the DoD National Industrial Security System

RESEARCH PROJECTS

UNIX File System | C, [Nautilus AeroKernel](#)

Sept. 2024 – Present

- Developed a low level C file system modeled after UNIXV6, inspired by ext2 and lfs, for CS 343 Operating Systems
- Integrated FS interface into the Nautilus Aerokernel, implementing core features of the block, inode, file, directory, and path layers, along with inode structures, superblock, and bitmaps to enable reading, writing, and file creation
- Designed a **comprehensive test suite**, including command-line tests, a checkdisk utility, as well as a tool to generate disk images for the system

Distributed Micro-controller Communication | Rust, C, [Tock OS](#)

Sept. 2023 – Mar. 2024

- Conducted research under Professor Branden Ghena to develop low-level embedded communication protocol
- Utilized Rust to develop drivers and **kernel-level** features that facilitate application and operating system communication between resource-scarce embedded devices forming a basic **distributed system**
- Enabled resource sharing across Tock OS powered nordic micro-controllers strictly over wired UART connections

SKILLS AND QUALIFICATIONS

Languages: Python, C/C++, Java, SQL, JavaScript/TypeScript, Go, Spring Boot, Rust

Development Tools: Git, Gradle, AWS (Lambda, RDS, API Gateway, S3, EC2, DynamoDB), Docker, Jira, Tableau

Frameworks/Packages: Nextjs, React, Angular, Pandas, NumPy, React Native, WordPress

U.S. Security Clearance: Secret (Apr 2023 - September 2023), Inactive