

Liheng Yuan

US Green Card | lihengyuan.dev@gmail.com | linkedin.com/in/liheng-yuan | lihengyuan.dev | github.com/Andy2887

EDUCATION

Northwestern University

B.A. Computer Science

GPA: 3.70/4.00

Relevant Courses: Distributed Systems, Operating Systems, Database Systems, Computer Networking, Low-level Software Development, Design & Analysis of Algorithms, Parallel Computing with CUDA, Large Language Models

Expected Graduation: Dec 2026

Evanston, IL

EXPERIENCE

IBM

Software Developer Intern

Jun 2026 – Sep 2026

San Jose, CA

- Fixed **Kubernetes** liveness-probe failures caused by mTLS by isolating probes on a dedicated plain-HTTP endpoint since kubelets cannot trust the internal CA, restoring correct liveness checks
- Built a custom MCP server using **Python**, enabling IBM's Coding Agent to retrieve and reason over internal documentation, reducing manual lookup time for **4** teams
- Reengineered **Node.js** job scheduling from polling to event-driven triggers, cutting task pickup latency by **98%**
- Implemented cross-project dependency version validation in the **CI/CD** pipeline, preventing integration bugs

Tracel-AI

Open Source Contributor

Apr 2026 – Sep 2026

Remote

- Contributed to a deep learning framework written in **Rust** with **15k** GitHub stars
- Improved performance of broadcast element-wise ops by **98.4%** in the CPU backend by collapsing both operand layouts into a single autovectorizable loop nest — github.com/tracel-ai/burn/pull/5123
- Restructured multithreaded device channel tasks to propagate panic payloads to the caller, restoring diagnostics for debugging concurrent execution failures — github.com/tracel-ai/cubecl/pull/1376

Northwestern University Prescience Lab

Research Assistant

Apr 2026 – Jun 2026

Evanston, IL

- Engineered an **OpenCL** backend for a compiler, expanding GPU support from NVIDIA-only to **3+** vendors
- Added support for encoded data types to the **CUDA** backend, enabling correct execution for **70+** operations
- Identified and resolved a silent fallback in the GPU dispatch layer, preventing misreported test results

TicketBarber

Software Engineer

Apr 2025 – Sep 2025

Evanston, IL

- Developed an event management platform used by **30+** organizers to sell tickets and manage events
- Engineered a payment system in **TypeScript** with Stripe API, using **PostgreSQL** as the source of truth and idempotency keys on PaymentIntent creation to prevent duplicate charges from retries or timeouts
- Built an email notification feature with **AWS SES**, automating communication between organizers and attendees

Northwestern University

Teaching Assistant – Programming in Systems-Level Languages

Jan 2025 – Present

Evanston, IL

- Taught **200+** students **C/C++** fundamentals and debugging strategies, enabling them to independently write and troubleshoot functional code

PROJECTS

Distributed Network Routing Simulator | *Python*

- Engineered an event-driven network simulator implementing distributed distance-vector and link-state algorithms with controlled flooding for optimal path computation to model core **BGP** and **OSPF** routing mechanics

Reliable Transport Protocol | *Python*

- Engineered a reliable streaming protocol over **UDP**, emulating core **TCP** mechanics to guarantee strictly in-order, lossless byte delivery over simulated channels with packet loss, delay-induced reordering, and bit corruption

TECHNICAL SKILLS

Languages: C, C++, Rust, Python, TypeScript, JavaScript, Java, SQL

Frameworks & Libraries: React, Next.js, Express.js, Flask, Spring Boot, Django, Angular, TailwindCSS

Others: Linux, Kubernetes, Docker, AWS, GCP, Git, GitHub, PostgreSQL, MySQL, Node.js, HTML, CSS