

# Liheng Yuan

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## EDUCATION

### Northwestern University

*B.A. Computer Science*

GPA: 3.53/4.00

**Relevant Courses:** Design & Analysis of Algorithms, Database Systems, Operating Systems, Distributed Systems

Expected Graduation: Dec 2026

*Evanston, IL*

## EXPERIENCE

### TicketBarber

Apr 2025 – Present

*Software Engineer Intern*

*Evanston, IL*

- Improved type safety by implementing **TypeScript** interfaces across the codebase, boosting code reliability
- Engineered multi-party checkout flow with **Stripe Connect API**, supporting fund distribution of **\$80,000+**
- Built a real-time analytics dashboard with **React** to display revenue, ticket sales, and attendee metrics
- Implemented automated testing using **Playwright**, reducing testing cycle time by **90%**

### Develop & Innovate for Social Change

Jan 2025 – Jun 2025

*Software Engineer Intern*

*Evanston, IL*

- Built an inventory management system using **React/JavaScript** and **Java Spring Boot** for **100+** therapists
- Implemented a **PostgreSQL** database schema featuring **7** normalized tables to track **500+** inventory items
- Created authentication middleware using **Spring Security**, enabling secure user login and role-based access
- Developed UI with **Tailwind CSS** to support features like inventory search and budget visualization

### P.A.T.H.

Jan 2025 – Mar 2025

*Software Engineer Intern*

*Evanston, IL*

- Deployed AI model using **Python** and **Django**, making AI-generated meal options accessible for **7,000+** users
- Utilized **MongoDB** to store AI-generated responses to ensure users receive consistent personalized results
- Containerized the application using **Docker**, eliminating **95%** of environment-related conflicts

## PROJECTS

### RustyDB - Database Management System | *Rust*

- Constructed a relational database management system in **Rust** with a core focus on memory safety
- Built a storage engine with **buffer pool manager**, **LRU-K page replacement**, and **disk manager**
- Engineered **SQL operators** including filters, joins, and aggregations to process queries over relational data

### NoteBridge - Music Lessons Hub | *Java Spring Boot, MySQL, Redis, Firebase*

- Built an application to help Northwestern music students advertise lessons and connect with interested peers
- Used **MySQL** with **Spring Data JPA**, **Redis**, and **Firebase** to manage user data and image storage
- Implemented secure authentication and role-based access control using **Spring Security**

### BuildPilot - AI Agent | *Python, OpenAI API, CrewAI, Django*

- Architected multi-agent AI system using **CrewAI** and **OpenAI GPT-4.1 mini** for automated project planning
- Developed full-stack web application integrating AI agent into **Django** backend with **React** frontend interface
- Implemented multi-format document export functionality supporting PDF, Markdown, and plain text outputs

### Illinois Restaurant Compliance Analyzer | *AWS EMR, AWS S3, Apache Spark, Python*

- Engineered a big data processing pipeline to identify restaurant health code violations across Illinois
- Leveraged **AWS EMR**, **Apache Spark**, and **Python** to analyze inspection and violation datasets
- Created client-side application using **AWS SDK**, implementing status tracking that handles pending results

## TECHNICAL SKILLS

**Languages:** Java, C, C++, Python, SQL, JavaScript, TypeScript, C#

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

**Others:** Redis, RabbitMQ, Node.js, PostgreSQL, MySQL, HTML, CSS, Git, Github, AWS, Azure, Firebase