

# QUINN LIU

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## EDUCATION

**University of Pennsylvania - School of Engineering and Applied Science**

**Philadelphia, PA**

BS in Computer Science, Minors in Design and Math

GPA: 3.5

2021 - 2025

### Coursework

Data Structures and Algorithms I & II, Operating Systems, iOS Programming, Machine Learning, Distributed Web Systems, Databases, JavaScript Programming, Embedded Systems and Microcontrollers, Big Data Analytics, Artificial Intelligence, Computer System Organization and Design, UI/UX Design, Object Oriented Programming I & II.

## WORK EXPERIENCE

### *Software Engineering Intern – Symbotic*

**Summer 2024**

- Implemented end-to-end metrics observability platform for pallet sequencing team, utilizing historical logs and live metrics. Integrated live metrics intake and storage from within the team's C# .NET event-driven microservice.
- Configured, deployed, and managed Prometheus database and Grafana dashboards; deployed with Docker-Compose.
- Improved existing logs-processing PowerShell script speed and memory efficiency by 75% and 89%, respectively.

### *Freelance iOS Application Developer - Red Door Inventory Manager*

**Summer 2024**

- Built iOS inventory management application with SwiftUI and Firebase for local business.
- Increased ideation to installation speed by 55% using CRUD operations, QR/PDF generation, and inventory database.

### *Software Engineering Intern – Symbotic*

**Summer 2023**

- Developed Python UI tests across all Symbotic applications and 20% of new Breakpack feature testing methods.
- Implemented PowerShell script to automate test execution and logging within Symbotic's Automated Test Framework, improving test execution efficiency by ~75%.

## PROJECT EXPERIENCE

### *AI-Powered Personalized News Aggregator*

**Spring 2025**

- Built full-stack, AI-powered news platform with Next.js, Express.js, Flask, & MongoDB, integrated with OpenAI API.
- Developed daily web crawler with BERTopic clustering to generate news topics. Implemented article & query caching.
- Features customizable article summaries, source and bias filtering, trackable topics, and AI-generated news podcasts.

### *Distributed Cloud Search Engine*

**Fall 2024**

- Implemented a scalable search engine using Java deployed on the cloud via AWS EC2. Built on top of a custom webserver, distributed crawler, key-value store, and analytics engine to process and index 50,000+ web pages.
- Optimized query search with parallelized lookups, index optimizations, and bigram term support. Implemented efficient data pipelines and ranking mechanisms with TF/IDF and PageRank algorithms.

### *Automated Cocktail Maker*

**Spring 2023**

- Built fully automated cocktail maker controlled via ATmega328PB microcontroller, programmed with embedded C.
- Fluid dispensing accurate within 0.2 oz using DC pumps. User interface displayed using custom LCD graphics library.

## PROGRAMMING LANGUAGES AND TECHNICAL TOOLS

- Proficient:** Swift, Java, Python, JavaScript/Typescript, C, C#, React.js, Flask, Express, SQL, PowerShell, AWS EC2.
- Basic Experience:** PyTorch, PySpark, Tensorflow, Docker/Docker-Compose, MongoDB, Pandas

## LEADERSHIP EXPERIENCE

### *President - Theta Tau Professional Engineering Fraternity*

**Winter 2023 - Winter 2024**

- President of co-ed, preprofessional engineering fraternity with 80+ members. Lead executive board with 15+ members.
- Launched new "Career Paths" initiative; professional development guides for students in 7+ different industries.

### *Head Counselor - New England Youth Chinese Summer Camp*

**2018 - 2023**

- Recruited, trained, and mentored all 35+ camp staff members throughout the year and developed camp protocols.
- Coordinated logistical planning for camp-wide activities for all 100+ campers.