QUINN LIU

www.quinnliu.tech | quinnliu@seas.upenn.edu | Boston, MA

WORK EXPERIENCE

Software Engineer I | Symbotic   **Summer 2025 - Present**
- Developed data pipelines & training infrastructure with PyTorch Lightning to implement video classification models.
- Trained & optimized deep learning models (*MViT, R(2+1)D, Swin3D, V-JEPA*), achieving 98% accuracy on ~3,000 labeled clips and reducing improved false positive detection by 30%.
- Partnered with senior engineer and senior director to drive ML integration into team operations, leveraging Google Cloud Vertex AI Workbench, PyTorch, and Label Studio to streamline data management and deployment experimentation.

Freelance iOS Application Develop | Red Door Inventory Manager   **Summer 2025**
- Built iOS inventory and workflow management application with SwiftUI and Firebase for local business of 10+ users.
- Increased ideation to installation speed by 55% using CRUD operations, QR/PDF generation, and inventory database.

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.
- Configurated, deployed, and managed Prometheus database and Grafana dashboards; deployed with Docker-Compose.
- Improved existing logs-processing data pipeline speed and memory usage by 75% and 89%, respectively.

EDUCATION

University of Pennsylvania | School of Engineering and Applied Science   **Philadelphia, PA**
BS in Computer Science, Minor in Design | GPA: 3.5 | Graduated May 2025
Coursework
Data Structures and Algorithms, Operating Systems, Artificial Intelligence, Machine Learning, Distributed Web Systems, Databases, JavaScript Programming, iOS Programming, Embedded Systems & Microcontrollers, UI/UX Design, Object Oriented Programming.

PROJECT EXPERIENCE

Personalized News Aggregation Application   **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 machine learning clustering (BERTopic) to generate top daily new topics.
- Offers 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   **2023 - 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.