

John Li

☎ (347)-863-6351 • ✉ j.li022623@gmail.com • in J0hnL1

Education

Rochester Institute of Technology - Rochester, NY

Year 3 - Computer Science B.S. - Expected May 2027

Experience

SWE Fellow

July 2024 - Present

Headstarter

Remote

- Spearheaded the development of 5+ AI applications and APIs, leveraging NextJS, OpenAI, Pinecone, and StripeAPI to achieve 98% accuracy and deliver solutions to over 1000 users.
- Adopted advanced Agile methodologies, CI/CD processes, and microservice architecture under the guidance of senior engineers from Amazon, Bloomberg, and Capital One.
- Partnered with a team to oversee the full project lifecycle, from design to deployment, leveraging MVC design patterns for optimal results.

Teaching Assistant

Jul 2020 - Aug 2020

Delta Learning Center

Brooklyn, NY

- Led one-on-one help for students with problem-solving and assisted students in understanding and applying course concepts through clear explanations and examples.

Projects

E-Commerce Website - (Java, Spring Boot, MySQL, ReactJS, Spring Data JPA)

- Architected and implemented a robust full-stack e-commerce platform, leveraging Spring Boot for backend services and ReactJS for the frontend.
- Established a secure payment gateway integration using Stripe API, ensuring PCI compliance and reducing payment processing time by 30%.
- Optimized database schema using MySQL and Spring Data JPA, improving query performance by 40% and enabling efficient management of product catalogs, user data, and transaction records.
- Implemented RESTful APIs using Spring Boot, facilitating seamless communication between frontend and backend services, which improved overall system responsiveness by 35%.

MQTT Broker - (C)

- Devised a comprehensive MQTT broker from scratch, strictly adhering to MQTT 3.1.1 standards, resulting in a fully-compliant, high-performance messaging system.
- Designed and implemented an efficient MQTT packet handling mechanism, leveraging a trie data structure for optimal topic namespace management and message routing, significantly improving broker performance.
- Developed a robust handler system utilizing a custom hashtable implementation with Knuth's multiplicative method for CRC32 string hashing, enhancing client information storage and connection management.
- Architected network communication layer using TCP/IP sockets and integrated the epoll interface, enabling efficient event-driven I/O multiplexing for concurrent handling of multiple client connections.

Naive Bayes Spam Filtering - (Python, NumPy, Scikit-learn, NLTK)

- Curated and preprocessed a diverse dataset of emails, applying natural language processing techniques to clean and standardize text data, resulting in a robust foundation for model training.
- Optimized model hyperparameters through rigorous experimentation, fine-tuning the classifier to achieve a 98% accuracy rate in spam detection.
- Conducted comprehensive model evaluation using k-fold cross-validation and confusion matrix analysis, demonstrating high precision and recall metrics that validated the classifier's effectiveness across diverse email scenarios.

Flask Invoice Generator - (Python, Flask, SQLAlchemy, SQLite, WeasyPrint, Bootstrap)

- Constructed a comprehensive invoice management system using Flask and SQLAlchemy, enabling users to create, edit, and delete invoice items, resulting in a 40% reduction in invoice processing time.
- Implemented WeasyPrint library to dynamically generate professional PDF invoices from HTML templates, incorporating company details, customer information, and itemized transactions, enhancing document quality and consistency.
- Optimized database queries using SQLAlchemy ORM, resulting in a 30% improvement in application response time when handling large numbers of invoices.

Skills & Certifications

Languages: Python, Java, C, C#, C++, SQL, JavaScript, CSS, HTML.

Tools: JUnit, Git, Homebrew, Docker, Apache Maven, SonarQube, Nginx, Ngrok.

Operating Systems: Unix, Linux, Windows.

Frameworks: Django, Flask, Spring Boot, Angular, React, ASP.NET.

Relevant Courses: Discrete Math, Physics, Systems Engineering, Mechanics of Programming, Software Engineering, Algorithms, Probability & Statistics, Artificial Intelligence, Linear Algebra.

Certifications: Front End Development Libraries, Relational Database, Responsive Web Design.

(above certifications from freeCodeCamp.)