

YIMIAN LIU

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EDUCATION

Cornell University

M.Eng. in Electrical and Computer Engineering; GPA: **3.85/4.00**

Ithaca, NY, USA
Aug. 2022 – Dec. 2023 (Expected)

Relevant coursework: Distributed Computing Principles, Embedded Operating System, Deep Learning, Machine Learning, Digital Systems Design Using Microcontrollers, Computer Vision, Computer Networks, UNIX Tools and Scripting

University of Liverpool

B.Eng. in Electrical and Electronics (Honor Degree); GPA: **3.83/4.00**

Liverpool, UK

Sep. 2017 – July 2021

Relevant coursework: C/C++ Programming, Software Engineering, Image Processing, Neural Networks

SKILLS

Languages: Python, C/C++, TypeScript/JavaScript, Java, HTML/CSS, PHP, Lua, Linux Bash, SQL, Assembly

Technologies: Kubernetes, Docker, Nginx, Node.js, React, Sass, MongoDB, MySQL, Git, CI/CD, RESTful, AWS

WORK EXPERIENCE

Front-End Developer Intern

Guzman Energy

New York, NY, USA

July 2023 – Sept. 2023

- Improved a trading index portal with **ReactJS**, **TypeScript**, and **Material-UI**, applying CSR for better user interaction.
- Integrated Microsoft Azure 2FA into the trading portal, utilizing **OAuth2** and **JWT** for secure user login.
- Leveraged **Docker** to containerize the applications and deployed them to **AWS EC2** for efficient scaling.
- Developed an AI Scribe App for **Android** and **iOS** using **React Native** from scratch, adhering the Figma designs provided by the UI team.
- Collaborated with backend team, utilizing **RESTful API** and Bearer tokens for secure data management and user authentication.

PROJECTS

Deployment and Orchestration of a Kubernetes Infrastructure

Individual Project

Ithaca, NY, USA

Jan. 2023 – Present

- Architected a scalable Kubernetes cluster with **Kubeadm** and **Helm**, efficiently handling high-traffic web services.
- Managed **Docker** containers via **Kubernetes**, ensuring efficient load balancing and auto-scaling.
- Implemented **Nginx Ingress** for secure and well-distributed external service access.
- Leveraged **Prometheus** and **Grafana** for real-time system monitoring, enhancing performance and stability.
- Set up centralized logging with **Elasticsearch**, **Logstash**, **Kibana (ELK Stack)**, and **Kafka**, enabling real-time log analysis and quick troubleshooting.
- Integrated DroneCI with Github for **CI/CD**, streamlining code updates and bug resolution.

Full-Stack Development and Management of High-Traffic Web Services

Individual Project

Ithaca, NY, USA

April 2018 – Present

- Conceptualized, designed, and deployed various self-developed, purpose-specific websites and web services.
- Employed advanced front-end technologies like Gatsby, **ReactJS**, **Sass**, **Bootstrap**, **WebSocket**, and **JQuery**, integrating **GA4** for data-driven performance analytics.
- Efficiently handled back-end services using a mix of Node.js, **Express**, Python **Flask**, and **PHP**, showing flexibility and adaptability across different programming environments and requirements.
- Developed a widely-used Random Image API with **PHP**, **MySQL**, **Redis**, and **CDN**, achieving **over 100,000 visits per day**, highlighting capability in scaling web services.

Distributed, Linearizable, Sharded Key-Value Database

Course Project advised by Prof. Lorenzo Alvisi

Ithaca, NY, USA

March 2023 – May 2023

- Crafted a high-performance, sharded key-value store using **Java**, tailored for distributed environments.
- Adapted and deployed the **Multi-Paxos** protocol, a key algorithm ensuring system resilience as long as a majority of servers are operational.
- Refined system efficiency by transforming Multi-Paxos into a streamlined **Raft**-like protocol, reducing complexity while boosting performance.

AWARDS

- Machine Learning:** Secured **2nd rank** out of 55 in a Cornell in-class Kaggle competition by designing a highly accurate CNN model using **Keras**, with data preprocessing and ensembling techniques applied to a noisy MNIST dataset.