YIMIAN LIU

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EDUCATION

Cornell University **Ithaca, NY, USA**
M.Eng. in Electrical and Computer Engineering; GPA: **3.94/4.00** *Aug. 2022 – Dec. 2023*
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 **Liverpool, UK**
B.Eng. in Electrical and Electronics (Honor Degree); GPA: **3.83/4.00** *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 **New York, NY, USA**
Guzman Energy *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 **Ithaca, NY, USA**
Individual Project *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 **Ithaca, NY, USA**
Individual Project *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 **Ithaca, NY, USA**
Course Project advised by Prof. Lorenzo Alvisi *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.