Yu Tsung (Eric) Kuo

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EDUCATION

Carnegie Mellon University — Mountain View, CA

Master of Science in Software Engineering — Sep 2023 - Dec 2024

Relevant coursework: Cloud Computing, Software Testing and Verification, Foundation of Database Design

Teaching: TA of 18659-Software Engineering Methods

National Cheng Kung University — Tainan, Taiwan

Bachelor of Science in Computer Science and Information Engineering; GPA 3.83/4.3 — Sep 2018 - June 2022

WORK EXPERIENCE

Your Knowledge — Remote

Software Engineer — Dec 2022 - Feb 2024

- Developed and integrated 3 **Gin-based microservices** for an e-commerce WordPress website with **Go** and **LAMP stack**
- Streamlined infrastructure management and cost-efficiency by architecting **Docker** and **Azure Kubernetes Services (AKS)**, leveraging **Terraform** for Infrastructure as Code (IaC) practices and **Helm** for Kubernetes chart management, achieving a 40% reduction in infra costs and ensuring consistent, reproducible builds for efficient testing environments
- Designed and implemented a automated **CI/CD pipeline** using **GitHub Actions**, increased deployment frequency by 75%
- Refactored the frontend using **Next.js** and **Redux**, leading to a 25% improvement in site loading speeds and a seamless UX

Nightingale AI. — Tainan, Taiwan

Software Engineer — July 2020 - Oct 2022

- Led the frontend development in **React.js** framework, employing the **React Flux architecture** and adopting **component-driven development** approach to enhance the **Single Page Application (SPA)** development process
- Engineered web components using **Chakra UI** and **Styled Components**, collaborated with designers to establish a design system through **Storybook**, ensuring a seamless integration of UI/UX designs, resulting in 60% increase in user satisfaction
- Enhanced code quality by utilizing **ESLint**, **Prettier**, **Husky** and **migrating the JavaScript codebase to TypeScript**

PROJECTS

WeCloud Chat - Autoscaling and Multi-Cloud Microservices Social App

- Engineered a real-time chatting and social application utilizing a microservices architecture with **Java Spring Suite**, **Maven**, **STOMP (sub-protocol over Websocket)** and **Redis Pub/Sub (messaging service feature from Redis)**
- Implemented multi-cloud deployment strategy across **Google Kubernetes Engine (GKE)** and **Azure Kubernetes Service (AKS)**, utilizing **Docker**, **Kubernetes**, and **Helm** for containerized applications orchestration and management
- Engineered a heterogeneous database ecosystem, integrating **MySQL**, **MongoDB**, **Neo4j**, and **Redis** to support diverse data models and achieve high performance, scalability, and reliability in data management
- Executed unit testing with **JUnit** and **Mockito** with **JaCoCo** analysis, achieving 98% in code coverage

Parallel Code Optimization on Machine Learning Algorithms

- Accelerated machine learning algorithms (k-NN, k-Means, and SVM) by 7x through **multi-threaded programming**, leveraging **C++**, **Cmake** and **OpenMP** to optimize computational efficiency and performance in data processing
- Conducted performance optimization experiments by analyzing different scheduling mechanisms and thread affinity on datasets ranging from 100M to 100G using the **Linux perf tool** and **Shell script**; visualized results with **GNUplot**

Emergency Social Network - MERN stack Real-Time Chatting App

- Led a team of 5 to built a chatting app using **Express, WebSocket, TypeORM (ORM for TypeScript), MongoDB**
- Developed token-based authentication feature with **Passport.js** and **JWT (JSON Web Tokens)** for stateless token system
- Utilized **Jest** for unit testing and **Supertest** for integration testing, and automated CI pipeline with **GitHub Actions**

SKILLS

Programming Languages: TypeScript, JavaScript, Python, C/C++, Go, Java, PHP, C#, F#, Bash, SQL

Cloud Computing: AWS, Azure, GCP, Kubernetes, Helm, Terraform, boto3, Hadoop, Spark

Tools & Framworks: React.js, Express.js, Next.js, MongoDB, MySQL, Docker, OpenMP, CUDA