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EDUCATION

Carnegie Mellon University

Master of Science in Software Engineering

• Relevant coursework: Foundation of Software Engineering, Software Testing and Verification

Mountain View, CA

Sep 2023 - Dec 2024

National Cheng Kung University

Bachelor of Science in Computer Science and Information Engineering; GPA 3.83/4.3

Tainan, Taiwan

Sep 2018 - June 2022

WORK EXPERIENCE

Your Knowledge

Software Engineer

Remote

Dec. 2022 - Present

- Developed a full-stack online course website with 2k users using **Next.js**, **TailwindCSS**, **MySQL**, **Wordpress**, **PHP** and **Slim Framework**, deployed with the **Apache HTTP Server** on **Microsoft Azure**
- Employed **Docker Azure Kubernetes Services (AKS)** to implement a resilient deployment strategy with **OpenShift**, integrating a streamlined **CI/CD pipeline** powered by **GitHub Actions**
- Utilized **Next.js** to enable **server-side rendering** in a **TypeScript-based web application**, while incorporating **latest App Router feature** and **React Server Components** for enhanced SEO and a **70% improvement in page loading speed**
- Leveraged **Redux** for **centralized state management** and applied essential middleware, including **Redux-Thunk**, **Redux-Persist**, and **Redux-Logger**, resulting in a 40% reduction in debugging time
- Integrated the **ECPAY API** for payment, logistic, and invoice services; adopted **Google Authentication** for user login

Nightingale AI.

Software Engineer

Tainan, Taiwan

July 2020 - Oct. 2022

- Led the frontend applications development in **React.js** framework to develop the **SPA** with **React Flux architecture**
- Developed a digital verification service using **React.js**, **FastAPI**, and **PostgreSQL** to digitize paper documents and expedite the application process, benefiting more than 100k students across 60+ universities in Taiwan annually
- Collaborated with designers to establish a reusable design system using **Chakra UI** and **Styled Components** for visualizing medical data, leading to a 30% increase in development speed and supported 100+ healthcare professionals during COVID-19
- Enhanced code quality by utilizing **ESLint**, **Prettier**, **Husky** and migrating the **JavaScript** codebase to **TypeScript**

AINimal

Software Engineer

Tainan, Taiwan

Oct. 2019 - Nov. 2022

- Designed and implemented a **graph convolution network-based recommendation system** for a dating app, achieving a significant 70% accuracy in recall score through meticulous cross-validation
- Constructed a data pipeline using **Numpy** and **Pandas**, including text and sentiment analysis to enhance data quality
- Built an analytical dashboard with **Apache ECharts** and **Matplotlib**, enabling the team to make data-driven decisions

PROJECTS

Emergency Social Network - Express based real-time chatting app

July 2023 - present

- Collaborated with a team of 5 using **Scrum** and **Kanban** methodologies to develop a real-time chatting app
- Led the development of **RESTful APIs** using **Express.js**, and implemented real-time connections using **WebSockets**
- Applied ES6 **OOP** features, with the **MVC pattern** and **SOLID principles** to design and build a maintainable system
- Incorporated **TypeORM** with **MongoDB**, ensuring type-safe DB interactions and streamlined data management
- Conducted unit testing with **Jest**, applying dependency injection with **SQLite** to prevent effects on the production database
- Applied the **Block Element Modifier (BEM)** methodology in frontend development to ensure a **modular CSS** approach

Super Mutant Test - Structural Testing on Alibaba/Fastjson

Sep. 2023 - Nov. 2023

- Applied mutation testing with **Pitest** on an open-source project, enhancing code robustness and identifying 3 native bugs
- Automated black-box testing with **Fitness** and the **Fit framework**, analyzing the input space model and applying diverse **combinational strategies** (like **All-Pair**, **Base-Choice**) to enhance testing thoroughness
- Executed unit testing with **JUnit** and **Mockito** with **JaCoCo** analysis, achieving a 30% increase in code coverage
- Implemented model checking with **SpinRPC** and **Promela** to identify concurrency issues like deadlocks and race conditions

SKILLS

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

Web Development: React.js, Vue.js, Express.js, Flask, Next.js, MongoDB, MySQL, Azure, AWS, Docker