

Hao-Yi (Karen) Tu

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Professional Experience

ByteDance Inc.

Full-Stack Software Engineer

San Jose, CA

Sep 2023 – Present

- Developed and enhanced internal tools for managing high-priority workflows, improving usability for over 50 internal users through enhanced task tracking, workflow automation, and real-time collaboration features using **Go KiteX** and **TypeScript**, **React**, and **GraphQL**.
- Engineered secure, microservice architecture leveraging **Python**, **FaaS**, **Node.js**, **GraphQL**, and **RPC** facilitating collaboration with cross-functional teams to enhance application performance and user experience.
- Resolved cross-region downtime incidents, increasing platform reliability and global accessibility.
- Acted as the primary code reviewer for frontend tasks, providing technical feedback and ensuring code quality, achieving 80% Defect Removal Efficiency.

Trend Micro Inc.

Sr. Engineer

Taipei, Taiwan

June 2019 – August 2021

- Helped 7,000+ business customers activate and track the usage of their solutions by developing the Activation Service and credit-based licensing service on Trend Micro's large-scaled application using **React** and **Redux**.
- Migrated multi-page to single-page application boosting activation success rate by 120% in 4 months.
- Led the design and implement internal User Behavior Report dashboard which enabled executives and analytics teams to make data-driven decisions on licensing business and saved the manual time of work over 60%.
- Designed and implemented a platform with features of data visualization and role-based access control (**RBAC**) advancing EU and NABU teams channel business to target on 3.49 times higher potential revenue growth customers.
- Reduced the time of first contentful paint by 50% through paging loading and cache.
- Ensured up to 100% coverage for new modules by completing unit tests in **Jest** and **React Testing Library**.
- Won 2nd place among 90 teams and 1,500 employees in an internal Customer Success and **DevOps** contest.
- Won 1st place among 20 teams in the Information System (IS) DevOps Camp.

Internship Experience

Johnson Controls Inc.

Software Engineering Intern

Campbell, CA

June 2022 – August 2022

- Designed and developed app store web application for smart home products using **TypeScript**, **React**, **Express.js** and **PostgreSQL** to facilitate 5 dealers and internal teams to distribute the android applications on end-user panels.
- Designed and built 10 APIs served version management, file validation, and upload with a team of 4 engineers using **Git** and conducted code reviews under **Feature Branch Workflow**.
- Enhanced codebase maintainability by implementing and optimizing back-end features and REST APIs using object-relational-mapper (**ORM**) and **JSON schema validator** designs with Sequelize and Ajv.
- Assisted and containerized client, API, login and database services with Docker to improve team development efficiency.

Skills

Programming Languages: Familiarity with WebDev Languages (HTML, CSS, JavaScript, JQuery), Typescript

Frameworks and Tools: React, Redux, RESTful API, RPC, Node.js, Express, Docker, Unit Testing (Jest), SQL, GraphQL, MongoDB, PostgreSQL, ESLint, Storybook, Git

Education

Carnegie Mellon University

Master of Science in Software Engineering

Mountain View, CA

January 2022 – May 2023

- Selected Coursework: Software Design and Architecture, Browser Security

National Taiwan Normal University

Bachelor of Arts, History, Cumulative GPA: 3.74/4.30

Taipei, Taiwan

September 2012 – January 2017

Projects

Full Stack Engineer, Emergency Social Network – Web Application Project

January 2022 – May 2022

- Developed emergency medical assistance web application with features of login, permission management, forum, chat, searching, performance measurement, and data visualization using **Express.js**, **Mongoose**, and **Heroku**.
- Wrote **unit** and **integration tests** using Jest and Axios and achieved 96% test code coverage.
- Improved the quality score by 40% by incorporating a **static analysis** tool in development to ensure code quality.
- Awarded 5 out of 10 badges among 10 teams, including Best Code Quality, Great UI, Great Collaboration, Best REST API Documentation, and Use of Design Patterns from 40 students.