Karen Hao-Yi Tu

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Education

Carnegie Mellon University   Mountain View, CA
Master of Science in Software Engineering   *January 2022 – May 2023 (Expected)*
- Selected Coursework: Foundations of Software Engineering, Software Design and Architecture, Browser Security

New York University, Tandon School of Engineering   Brooklyn, NY
Preparatory Course for Graduate Studies in Computing   *January 2021 – July 2021*
- Course topics include: Computer Programming in C++, Object Oriented Design, Discrete Math, Data Structures and Algorithms, Principles of Operating Systems, and Introduction to Computer Networks

University of California, Berkeley   Berkeley, CA
Summer Session: User Interface Design and Development, Design Methodology   *May 2018 – August 2018*
- Awarded one of three design awards from 30 teams in the User Interface Design and Development class

National Taiwan Normal University   Taipei, Taiwan
Bachelor of Arts, History, Cumulative GPA: 3.74/4.30   *September 2012 – January 2017*

Skills

Programming Languages: Familiarity with WebDev Languages (HTML, CSS, JavaScript)
Frameworks and Tools: React, Redux, RESTful API, Node.js, Unit Testing (Jest), MongoDB, PostgreSQL, ESLint, Git

Professional Experience

Johnson Controls Inc.   Campbell, CA
Software Engineering Intern   *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 RESTful 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.

Trend Micro Inc.   Taipei, Taiwan
Sr. Engineer   *June 2019 – August 2021*
- Helped 7,000+ business customers activate and track the usage of their solutions by developing the Trend Micro Activation Service and credit-based licensing service UIs using **React** and **Redux**.
- Migrated from multi-page to single-page application which boosted the activation success rate by 120% in 4 months.
- Launched an internal User Behavior Report dashboard which enabled executives and analytics team to make data-driven decisions on licensing business 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.

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.

Front-End Engineer, Homie – Web Application Project   *February 2019 – March 2019*
- Developed housework management app with features of **OAuth login**, account, and task management **CRUD** operation via React and Firebase.
- Visualized the task-rewarding system by plotting bar charts using **D3.js** to drive users with incentives.