

Karen Hao-Yi Tu

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Education

Carnegie Mellon University

Candidate for Master of Science in Software Engineering

Mountain View, CA

January 2022 – May 2023 (Expected)

- Relevant Coursework: Foundations of Software Engineering, Software Verification and Testing

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 Test (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.
- Collaborated with a team of 3 to design and build 10 APIs using **Git** and conducting code reviews.
- Implemented and optimized back-end features and RESTful APIs by incorporating the object-relational-mapper(**ORM**) and the **JSON schema validator** designs using Sequelize and ajv to enhance codebase maintainability.
- 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

- Developed Trend Micro Activation Service and credit-based licensing service UIs using **React** and **Redux** to help 7,000+ business customers activate and track the usage of their solutions.
- Migrated from multi-page to **single-page web app** 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**) to advance EU and NABU teams channel business targeted on customers whose potential is 3.49 times higher.
- Ensured efficient user experience through paging loading and cache reduced the time of first contentful paint by 50%.
- Completed unit tests in **Jest** and **React Testing Library** ensured up to 100% coverage for new modules.
- 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 percentage.
- Incorporated **static analysis** tool in development to ensure code quality and improved the quality score by 40% .
- Awarded 5 out of 10 badges, including Best Code Quality, Great UI, Great Collaboration, Best REST API Documentation, and Use of Design Pattern among 10 teams of 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 initiatives.