David Ethan Hwang

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EDUCATION

Carnegie Mellon University, Pittsburgh, PA, United States   May 2023
- Bachelor of Science in Electrical and Computer Engineering **(GPA: 3.94/4.00)**
- Relevant Coursework: Data Structures and Algorithms, Computer Systems, Logic Design and Verification (SystemVerilog), Computer Security, Embedded Systems, *Database Systems (upcoming semester)*

SKILLS

Programming Languages: TypeScript, JavaScript, Python, C, Web (HTML, CSS)
Hardware Description Languages: SystemVerilog
Frameworks: MongoDB, Express, React, Next.js, GraphQL, Node.js
Hardware: Arduino, Raspberry Pi, FPGA
Spoken Languages: Fluent English and Filipino, Conversational Mandarin and Hokkien

WORK EXPERIENCE AND RESEARCH

Dashlabs.ai (Y Combinator Winter 2021), Palo Alto, CA   May 2021 – August 2021
Software Engineering Intern
- Design a digital platform for our client, the Philippine Red Cross (PRC), for managing clients and insurance memberships, especially for the vaccine rollout overseen by PRC in the Philippines, and increased user membership by almost 1000 users since launch
- Develop the frontend of the platform with TypeScript, React, and Next.js and its components, including the administrator panel and a QR code reader for PRC's membership IDs
- Create the backend of the platform with TypeScript, Node.js, Apollo GraphQL, and MongoDB, and design the database schemas for the platform
- Build a script in TypeScript to parse and normalize the application forms of PRC's clients from on-site application forms to fit our database schema

CMU Human-Computer Interaction Institute, Pittsburgh, PA   May 2020 – Present
Research Assistant for the Computer Human Interaction: Mobility Privacy Security (CHIMPS) Lab
- Develop modular operations and applications with Node.js, Python, and Docker that integrate smart home hardware like a smart doorbell through our research lab's privacy centered IoT development framework called *Peekaboo*
- Profile the runtime performance of the applications and modular operations for *Peekaboo*
- Create a privacy-centered framework based modular NoFlo components/operations called *Riverbank* for crowdsourcing and aggregating smart home data for use in urban applications

EXTRACURRICULAR ACTIVITIES

ScottyLabs Tech Committee   September 2019 – Present
Tech Project Lead
- Develop and deploy web applications like our API dashboard which handles both the documentation for the club's APIs and the authentication backend for various projects that need CMU credentials
- Design and maintain the Course API to allow student developers to retrieve course data easily and develop a frontend web application in React to view course information and student evaluations
- Build and manage the DevOps infrastructure for most of the club's web-based applications with Nginx, Travis CI, Docker, and Google Cloud Platform

PROJECTS

Settlers of Catan in Python   2019
- Created a hexagonal coordinate system to handle the "hex and edge grid" game board of Catan
- Built the core features and user interface of the game with Pygame
- Developed a basic AI to play against the user or against other AI players

Philippine Hokkien Dictionary in Node.js/React   2021
- Design a database schema that can store relevant pronunciations and word senses for each character or phrase
- Develop an Node.js module that converts between different romanization schemes for Philippine Hokkien orthography