Gram Liu

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Education

Carnegie Mellon University
Bachelor of Science in Electrical and Computer Engineering, May 2023

GPA: 3.9/4.0
Dean's List

Relevant Coursework:

- Intro to Computer Systems (Assembly/C)
- Data Structures and Algorithms (C)
- Intro to Machine Learning (Python)
- Software Construction & Design (Java)
- Database Systems (C++)
- API Design & Implementation (Python)

Skills

Programming Languages:
JavaScript · TypeScript · Python · Java · C · C++

Technologies/Frameworks:
Node · React · Next.js · GraphQL · MongoDB · MySQL · Docker · AWS · GCP

Awards and Honors

- *8th Place*, Philippine National Olympiad for Informatics 2019

Research and Publications

Peekaboo: A Hub-Based Approach to Enable Transparency in Data Processing within Smart Homes
Co-Author, IEEE Symposium on Security and Privacy 2022
10.1109/SP46214.2022.00142

Work Experience

Dashlabs.ai (YC W21) · Software Engineering Intern — May 2021 to Aug 2021

- Built management platform for the Philippine Red Cross (PRC) with React.js and Next.js that was used for the initial mass COVID-19 vaccination roll-out in the Philippines
- Developed Apollo GraphQL and MongoDB schema for management of clients, chapters, and members of the PRC
- Created backend microservice to generate vaccination cards with QR codes, using Express and wkhtmltopdf

CMU Human Computer Interaction Institute · Research Assistant — May 2020 to Present
Computer-Human Interaction: Mobility Privacy Security (CHIMPS) Lab

- Created an IoT Smart home app development framework that enables reusable native privacy features using Node.js, Node-RED, and React
- Developing a decentralized app ecosystem for smart cities that enables privacy-first aggregation of smart home sensor data using AWS Lambda and DynamoDB

Dashboard Philippines · Full Stack Engineer — Mar 2020 to Aug 2020

- Developed a dashboard for information on hospitals, transportation routes, and relief distribution in the Philippines for the COVID-19 pandemic
- Designed database schema and backend to track patient and supply capacity of over 2,000 hospitals using MongoDB, Express, and React/Redux (MERN) in TypeScript
- Migrated data for the PRC from a legacy MySQL schema to MongoDB, bringing down COVID-19 test processing time from 2 weeks to 3 days at the height of the pandemic

Selected Projects

TartanHacks Software Suite · 2021

- Spearheaded design and development of a unified backend and MongoDB schema encompassing registration, scheduling, and project submission for TartanHacks
- Built backend with TypeScript and Express and configured CI/CD using Jest, GitHub Actions, and Postman

Parking Finder · HackMIT Fall 2021 · Best IoT Hack

- Built a web app which uses computer vision (OpenCV) to identify parking spots from CCTV footage

Medisure.ai · PennApps Fall 2020 · Top 3, Best Use of Google Cloud

- Created a web platform which uses natural language processing to summarize medical insurance documents and generate insurance claim appeal letters using GPT-3, GCP, Flask, and React

Activities

ScottyLabs · Director of Technology

- Managed 13 software engineering teams producing software projects for campus community
- Led development and deployment of software suite for TartanHacks 2021 and 2022 with over **300 participants from 18 countries**
- Pioneered a REST API and website for CMU course information and expected hours per week which currently has over **3,000 unique users**
- Built website providing live data on availability of on-campus dining locations with over **3,000 users** per month