

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:

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

* Fall 2022

Skills

Programming Languages:

JavaScript · TypeScript · Python · Kotlin · Ruby · Java · C · C++

Technologies/Frameworks:

Node · React · GraphQL · MongoDB · SQL · Android · Docker · AWS · GCP · Bash

Awards and Honors

- 8th Place, Philippine National Olympiad for Informatics 2019
- Silver Medal, International Invention and Innovation Competition in Canada 2018
- Bronze Medal, Asian Youth Innovation Expo 2018

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](https://doi.org/10.1109/SP46214.2022.00142)

Work Experience

Stripe · Software Engineering Intern

May 2022 to Aug 2022

- Developed a novel instrumented testing framework for the Stripe Terminal, emulating a physical reader with Android on CI for automated testing
- Fixed flakiness on CI that two engineers tried to solve unsuccessfully over the past 12 months, improving reliability of a core test suite from 80% to 100%
- Drove collaboration across 5 teams to scope out a key problem in the development of future emulator tests, identified potential solutions, and determined concrete steps for the fix

Dashlabs.ai (YC W21) · Software Engineering Intern

May 2021 to Aug 2021

- Built management platform for the Philippine Red Cross (PRC) which was widely adopted for the initial COVID-19 vaccination roll-out in the Philippines
- Developed Apollo GraphQL and MongoDB schemas for management of clients, chapters, and members of the PRC
- Created backend microservice to generate vaccination cards with embedded QR codes

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 supporting reusable native privacy features
- Developed 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 info on accessing essential services amidst the strict initial lockdown in the Philippines due to COVID-19
- Designed MongoDB database schema and backend to track patient and supply capacity of over 2,000 hospitals, collaborating with the Philippine Department of Health
- 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 development of a unified backend and MongoDB schema encompassing registration, scheduling, and project submission for TartanHacks

Parking Finder · HackMIT Fall 2021 · Best IoT Hack

- Built a web app to identify parking spots from CCTV footage using OpenCV

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

- Created a web app to summarize medical insurance documents and generate insurance claim appeal letters using GPT-3, GCP, Flask, and React

Activities

ScottyLabs · Director of Technology · TartanHacks Software Lead

- Managed 13 teams over 50+ members, developing software projects for the campus community
- Led development and deployment of software suite for TartanHacks 2021 and 2022 with over 300 participants from 18 countries each year
- Pioneered a REST API and website for CMU course information and expected hours per week which currently has had **3,600+ unique users**
- Built [website](#) showing availability of on-campus dining locations with **3,000+ monthly users**