# Gram Liu

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## Education

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

*Additional Minors:*
Computer Science

**GPA: 3.92/4.0**
*Dean's List*
*Tau Beta Pi, Eta Kappa Nu*

*Relevant Coursework:*
- Distributed Systems
- Database Systems
- Data Structures and Algorithms
- Computer Systems
- Software Construction
- API Design
- Machine Learning
- Pattern Recognition Theory

## Skills

*Programming Languages:*
JavaScript · TypeScript · Python · Kotlin · Java · Go · Objective C · C · C++ · Ruby

*Technologies/Frameworks:*
Node.js · React · MongoDB · SQL · Android · Docker · AWS · GCP · Bash

## Awards and Honors

- *Best NLP Hack*, HackMIT 2022
- *Best IoT Hack*, HackMIT 2021
- *Top 3, Best Use of Google Cloud*, PennApps Fall 2020
- *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

**Stripe** · Software Engineer                         July 2023 to Present
- Developed a test framework that dispatches tests for Tap to Pay to a fleet of physical test devices, improving product stability and reliability before rollout
- Led engineering work for Tap to Pay on iPhone international expansion, driving collaboration across 4 teams
- Identified and resolved issues in internal transaction reporting metrics, reducing reporting discrepancies by 93%

**Stripe** · Software Engineering Intern          May 2022 to Aug 2022
- Developed a novel instrumented testing framework that emulates physical readers on CI for automated testing
- Resolved CI flakiness 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 with a team of 3 for the Philippine Red Cross (PRC) which was pivotal in the first mass 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 May 2023
*Computer-Human Interaction: Mobility Privacy Security (CHIMPS) Lab*
- Built an IoT app development framework supporting reusable native privacy features
- Designed a domain-specific language (DSL), interpreter, and runtime for building decentralized privacy-centric smart city applications

**Dashboard Philippines** · Full Stack Engineer        Mar 2020 to Aug 2020
- Coordinated with Philippine Red Cross (PRC) and Department of Health to build a dashboard centralizing info on accessing essential goods and services in the Philippines during the COVID-19 lockdown
- Migrated legacy database systems and backend, bringing down COVID-19 test processing time from 2 weeks to 3 days at the height of the pandemic

## Selected Projects

**TartanHacks Software Suite** · 2021-2023
- Spearheaded development design and development of DB schema and backend/REST API encompassing registration, scheduling, and project submission for TartanHacks

**Pol.Lit** · HackMIT Fall 2022 · Best NLP Hack
- Built platform to improve political literacy and accountability using OCR, Pegasus, and BERT to convert PDF scans of bills (>20pgs) into 1 paragraph summaries

## Leadership

**ScottyLabs** · Director of Technology · TartanHacks Software Lead
- Managed 13 teams over 50+ members, developing software projects for the campus community
- 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**