

# Liheng Cao

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## EXPERIENCE

### Meta/Facebook

08/2022 – 02/2024

Software Engineer on Facebook Feed Health

Seattle, WA

- Efficiency: Saved **\$2M** from CPU wins across various projects by ideating, optimizing, and experimenting.
- Reliability: Designed, implemented, & deployed an automatic throttling platform across Feed to **auto-mitigate an entire class of reliability regressions**, preventing overnight pages.
- Augmented internal tools to simplify workflows and increase developer velocity for identifying efficiency wins.
- In a **tier 1 oncall**, prevented major site uptime outages, user experience, and revenue regressions by live debugging.

### Machines in Motion Lab at NYU Tandon

06/2021 – 05/ 2022

Undergraduate Research Assistant

Brooklyn, NY

- Contributed to research for **contact detection for legged locomotion** and **path integral for policy improvement**
- Assembled, tested, and repaired robots for **research and teaching**
- Developed **Python/C++ bindings** for IMU sensor, and modified USB driver and serial reader code
- Operated Vicon motion tracking system and integrated with robot motion

### RoboSub VIP Team at NYU Tandon

08/2021 – 05/2022

Software Team Lead

Brooklyn, NY

- Assigned tasks and **supervised team members** in motor control, vision, task planning, and localization
- As inaugural software lead, researched relevant topics and trained the team to setup the foundation of the team
- Developed the vision and task planning of the robot to allow autonomy during the competition

### Robotic Design Team at NYU Tandon

09/2020 – 09/2021

Software Competency Member

Brooklyn, NY

- Implemented **computation offloading** from robot to server to reduce robot size by allowing **robot-server communication**
- Integrated sensor and motor data to allow robot movement

## EDUCATION

### New York University, Tandon School of Engineering

Brooklyn, New York

Bachelor of Science in Computer Science, Minor in Mathematics, Magna Cum Laude

09/2019 – 05/2022

## SELECT SIDE PROJECTS — MORE ON [GITHUB](#) AND [PERSONAL WEBSITE](#)

### 2048 game terminal clone ([repo](#))

Python

- This was an interview question that I failed back in the day and I thought it was interesting enough to do as a project
- Simple terminal game written in Python

### Character recognition neural network in the browser ([demo](#))

Python

- Trained my own convolutional neural network using Pytorch on the EMNIST dataset
- Set up a no backend website to demo the model with a mouse cursor drawing.
- No backend! It's a static site! Everything runs on your browser.

### Cost Splitter App ([demo](#))

JavaScript

- Built a Cost Splitter app from scratch using basic web dev. for my roommates
- Receives name, price, and people to split amongst and outputs how much each person pays
- Allows roommates to split group grocery runs at Costco and restaurants

### CRUD App

Go

- Built a distributed Create, Read, Update, Delete database app using Go
- Implemented the Raft consensus algorithm
- App could be accessed from multiple frontends, and data was distributed over multiple backends

### SCUDEM V 2020 Differential Equations Modelling Competition ([repo](#))

Processing

- Modeled and animated the physics of a bird spinning around on a bicycle wheel as a part of a 3 man team
- Scored the highest score (4.875/5) out of 180 other teams

## KEY SKILLS

**Languages:** Python, C++, PHP, HTML, CSS, JavaScript, Rust, Golang, PyTorch

**Topics:** Software Engineering, Performance Optimization, Reliability, Efficiency, Latency, Machine Learning, Parallel and Distributed Systems, Robotics, Networking

Full Stack