

# RICKY MAO

✉ rickymao@gmail.com 🌐 rickymao.me ☎ 647 888 3885 📍 200 University Avenue West  
Waterloo, Ontario N2L 3G1

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## EDUCATION

### University of Waterloo

B. Eng Software Engineering 2024

GPA: 3.5

ECE Coursework: Digital Circuits and Systems

Computer Science Coursework: Data Abstraction and Implementation, Programming Principles

Sept. 2019 - Apr. 2024

## SKILLS

**PROFICIENT LANGUAGES AND TECHNOLOGIES:** C, Java, Swift, Cocatouch

**FAMILIAR LANGUAGE AND TECHNOLOGIES:** Firebase, HTML, CSS, Python

## PROJECTS

### BCSS Wildcats iOS App

Dec. 2018 - Current

- Independently developed and designed an iOS application called BCSS Wildcats to provide an easier academic experience for high school students. The app is currently helping over 300 students manage their academics while also giving them easy access to real-time updated information regarding events, teacher contacts, and more
- Implemented Firebase's JSON database to allow for real-time updates made by administration
- Incorporated MVC and delegate design patterns
- Integrated local persistent storage with Core Data to allow students to keep track of assignments and more
- Utilized: Firebase's Realtime Database, Swift, Core data, and CocoaPods

### Self-Operating Forest Fire Research Drone

Sept. 2019 - Dec. 2019

- Helped build a drone with classmates in my software engineering course that automatically seeks for areas of forest fires, and automatically takes photos of the proximity. From there, we stitch the pictures together and generate a heat map around the fire that will aid researchers in understanding forest fires.
- Was mainly responsible for designing and building the heat map generator in Python by using Matplotlib and Seaborn
- The heat map generator uses data points collected by the drone sensors and organizes them into data frames, so it can be used by the libraries to generate the visuals.
- Utilized: Matplotlib, Seaborn, and Python

### Jokes Lab Android App

Dec. 2016 - Jan. 2017

- Joke Lab is an Android application made with Java. The app randomly generates jokes that are locally saved and displays them for the user to enjoy or share. It currently has over 100 downloads and a 4.9 rating on the Google Play Store.
- Implemented Core Animation, so random emoji's would smoothly bounce out when a joke is generated.
- Used MVC design pattern
- Integrated Admob banner ads for monetization
- Utilized: Java, Core Animation, and Admob

## EXPERIENCES

### University of Waterloo, Academic Representative Waterloo, ON

Fall 2019 - Winter 2020

- Attended meetings with professors to address the needs and concerns of students in the software engineering cohort of 2024
- Addressed and communicated with my cohort about any academic related news

### TEDxYouthDeerLake, Director of Technology Burnaby, BC

Sept. 2018 - June 2019

- Developed and designed a fully responsive website for the Breaking Barriers event hosted by TEDxYouthDeerLake with CSS, HTML, and basic Javascript. The website
- Played a prominent role in delegating and cooperating with other members of the organization when planning out the event's logistics and choice of speakers

### Science World, Robotics Volunteer Vancouver, BC

Sept. 2017 - May 2019

- Aided the teaching of basics in robotics and programming at an advanced robotics club (age 8-11) organized by the non-profit organization Science World
- Curated and helped prepare lessons with regards to the programming language Robot C. These lessons taught topics on robotic sensors and motors.