

# Mohammad Mahfooz

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## Education

### York University, Lassonde School of Engineering

Expected Apr. 2025

Spec. Hons. Bachelor of Engineering, Software Engineering

Toronto, ON

- **Relevant Coursework:** Data Structures & Algorithms, Object-Oriented Programming, Unix/C
- **Overall GPA:** 3.8/4.0

## Experience

### Software Engineer Intern

Oct. 2022 - Jan. 2023

YURide

Toronto, ON

- Implemented the app front-end using **Interface Builder** and **SwiftUI**, creating an intuitive user interface. Utilized advanced features such as custom gestures and animations to enhance the overall user experience.
- Developed the app back-end using **Swift**, implementing custom data models and using **Core Data** for persistent storage.
- Built a scalable server-side infrastructure using **JavaScript** and **Node.js**, and utilized **MongoDB** for efficient storage and retrieval of large volumes of data. Created custom **RESTful** APIs for seamless communication with the front-end.
- Utilized **Git** and **GitHub** to manage version control and collaborate with team members on code changes.

### Individual Contributor

Open Source Software

- Contributed patches to various **Linux** kernel drivers, improving stability with different hardware configurations. Reviewed and updated legacy code to incorporate modern coding best practices and to make the code more efficient and maintainable.
- Aided in porting **Solaar** (an open source device manager for Logitech devices) from Linux to macOS and Windows.
- Created and maintained personal open source projects that have been downloaded and forked by others.

## Projects

### YorkURMP | JavaScript, HTML, GraphQL, Node.js

- Developed a browser extension using **JavaScript** and **Node.js** to grab a professors info (difficulty, rating, etc.) from RateMyProfessors and display it on the YorkU course portal.
- Utilized **HTML** knowledge to scrape course pages and insert RMP data next to the corresponding professors name.
- Implemented the **GraphQL-Request** library to pull professor data from the RateMyProfessors **GraphQL** API.
- Received **500+** downloads across Github and the Chrome Web Store.

### CoverGPT | Python, Tkinter, LaTeX, ChatGPT

- Developed an application that uses **AI** to generate personalized cover letters for job applications.
- Utilized **Python** and **ChatGPT** to generate a cover letter, which is tailored to the specific company and job position.
- Implemented **Tkinter** to design a user-friendly interface, and **LaTeX** to format and compile the cover letter into a PDF.
- Received **1000+** downloads on PyPi, a Python package repository.

### Air Quality Monitor | Java, C++, Firmata, JavaFX, jSerialComm

- Developed an air quality monitoring system that utilized **Java**, **C++**, and **Firmata** to communicate with an Arduino board to display real-time CO2 levels and temperature data. Used for identifying insufficiently ventilated spaces.
- Utilized **JavaFX** to display a GUI that shows real-time CO2 data on a chart and graph, enable control of a ventilation system from the interface, and allow the user to save data for further manipulation.
- Implemented **jSerialComm** for seamless communication between the Java-based GUI and the Arduino board.

## Volunteer Experience

### Team Lead

Sep. 2017 – Jun. 2021

VEX/FIRST Robotics #6977

Toronto, ON

- Promoted to team lead of the FIRST robotics team after success on VEX robotics team.
- Oversaw development of the robot for the **Infinite Recharge** competition, using **C/C++**.
- Lead team to provincial semi-finals by developing strategy to help compensate for a low budget.

## Technical Skills

**Languages:** C, C++, Python, Rust, Go, Java, Swift, JavaScript, TypeScript, Bash, SQL, R, HTML, CSS

**Tools and Frameworks:** Linux, Docker, Git, Node.js, Next.js, MySQL, MongoDB, GraphQL, React, Selenium, JUnit