# Mohammad Mahfooz

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## Education

**York University, Lassonde School of Engineering** Expected Jun. 2025

*Spec. Hons. Bachelor of Engineering, Software Engineering* *Toronto, ON*

- **Relevant Coursework:** Data Structures, Object-Oriented Programming, Unix/C, Computer Organization
- **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**: Java, Swift, JavaScript, TypeScript, Python, C, C++, Bash, SQL, R, HTML, CSS, MATLAB
**Tools and Frameworks**: Node.js, Next.js, MySQL, MongoDB, GraphQL, React, Linux, Docker, Selenium, JUnit, Git