Mohammad Mahfooz

(416)-993-8800 • mahfoozm@my.yorku.ca • linkedin.com/in/mohammadmahfooz • github.com/mahfoozm • mahfooz.tech

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 May 2023 - Present

Ontario Teachers' Pension Plan *Toronto, ON*

- Successfully migrated internal chatbot from using **Azure Cognitive Services** to Azure OpenAI **GPT-4** endpoints, improving response times by up to **200%** and response accuracy by up to **300%** (MMLU) for over 1300 employees.
- Developed backend **HTTP/1.1** endpoints with **Flask**, **Redis** (vector DB), and data stores (**Snowflake**, **Azure Blob Storage**).
- Leveraged Azure Kubernetes Service (**AKS**) for scalable container orchestration and implemented a streamlined CI/CD pipeline with **GitHub Actions**, **Jenkins**, and **K8s** for seamless deployment and management of the chatbot application.

Software Engineer Intern Oct 2022 - Jan 2023

YURide *Toronto, ON*

- Implemented app front-end using **SwiftUI**, utilizing features such as custom gestures and animations.
- Developed app back-end using **Swift**, implementing custom data models and using **Core Data** for persistent storage.
- Built 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.

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.

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.
- 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, OpenAI API*

- Developed an application that uses **GPT-3.5** to generate personalized cover letters for job applications.
- Implemented **TKinter** to design a user-friendly interface, and **LaTeX** to format and compile the cover letter into a PDF.
- Received **6000+** 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.
- Implemented **jSerialComm** for communication between the Java-based GUI and the Arduino board.

Volunteer Experience

Team Lead Sep 2017 – Jun 2021

VEX/FIRST Robotics #6977 *Toronto, ON*

- 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: Python, Rust, Go, C, C++, Java, C, JavaScript, TypeScript, Bash, SQL
Tools and Frameworks: Linux, Podman, Azure (AKS), Terraform, Git, Flask, Node.js, PyTorch, Snowflake, Redis, MySQL, React