

MAHIR KHANDAKER



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Professional Experience

Molex

Waterloo, ON, Canada

Embedded Software Developer Co-op

January 2022 – August 2022

- **Enhanced** the **reliability** and **performance** of a **multi-threaded legacy codebase** by refactoring it into **2 single concurrent processes** in C, limiting the possibilities of **race conditions** and resulting in a **10% decrease in runtime**.
- **Designed** and **executed** a comprehensive suite of **unit** and **integration tests**, covering various scenarios including **edge cases** and **boundary conditions**, to verify internal functionality, proper parameter usage, and accurate data handling.
- **Demonstrated** strong adherence to the **AGILE methodology** by **actively participating** in **sprint planning**, **daily stand-ups**, and **backlog refinement**. Collaborated with team members to promptly identify and resolve issues, ensuring efficient workflow, and timely achievement of sprint goals.
- **Skills Utilized:** C, Python, Cantata, Jira, Bitbucket, Git, Jenkins

TD Bank

Toronto, ON, Canada

Software Developer Co-op

September 2021 – December 2021

- Leveraged **C#** and the **SSIS platform** to seamlessly perform **ETL pipeline processes**. **Extracted** data from text files from multiple departments, **performed transformations**, and **loaded data** into a **MS SQL server**. This process enabled the execution of advanced **data modeling** and **data profiling queries**, extracting valuable insights using **SQL**.
- **Developed customized functions** within the **RSA ARCHER application**, tailoring solutions to meet the specific needs of internal employees.
- **Skills Utilized:** C#, SQL, SSIS (SQL Server Integration Services), RSA ARCHER, Jira, Bitbucket, Git

MAX Gala

Toronto, ON, Canada

Full-Stack Software Developer

June 2021 – August 2021

- **Enhanced** the functionality and **performance** of the MAX Aspire **React-based web application**, using **pagination** and **lazy loading**, resulting in **20% faster loading times** and improved user experience.
- Implemented a **Q&A feature** on the web app, empowering users to post and answer questions. Utilizing **Amazon API Gateway**, **AWS Lambda**, and **AWS RDS**, it facilitated the seamless execution of **REST API requests** to perform **CRUD operations** to manipulate the web application.
- Integrated a real-time **notification system** using a **WebSocket** library in React. This enhancement ensured authors received instant updates, fostering a dynamic and engaging user experience.
- Designed the **front-end UI** of the Q&A feature using **React.js**, **Bootstrap**, **JavaScript**, **HTML** and **CSS**. Created **modals** which facilitated a smooth question posting process, with seamless **data transmission** to the **cloud server**.
- **Skills Utilized:** AWS (Amazon RDS, S3, Lambda, API Gateway), React.js, JavaScript, Python, PostgreSQL, Postman, Docker, HTML, CSS, Bootstrap, GitHub, Git

Projects

Customized Python Trading Bot Full Stack Website

October 2023

- Using the **Alpha Advantage API**, created a **python trading algorithm** that executed trades using a momentum strategy.
- Created a **Flask/React full stack** website allowing **users to craft their own trading bot** and **back test** their **strategy** against the S&P500, NASDAQ and Buy & Hold Strategy. Users can also view their realized profit/loss and save their strategies.
- **Skills Utilized:** Python, Pandas, NumPy, Matplotlib, Flask, React.js, Node.js, JavaScript, Bootstrap, HTML, CSS, Git, GitHub

Capstone Project – Voice Activated Bike Turn Signal

September 2022 – April 2023

- Utilized **Edge Impulse** and **TensorFlow** for a **95% accurate** voice command detection machine learning model (MLM).
- Implemented **real-time processing** on an Arduino Nano 33 BLE board in **C++**, triggering LED lights for clear turn signals.
- **Skills Utilized:** Arduino IDE, Edge Impulse, Tensor Flow, C++, GitHub, Git

Education

McMaster University – Bachelor's in Electrical and Biomedical Engineering

Graduated April 2023

- **Relevant Courses:** Object-oriented programming in C, Data Structures & Algorithms in Java, Capstone Project

Skills

Languages: Java, JavaScript, Python, C, C++, C#, SQL, MATLAB, HTML, CSS

Technologies: Node.js, React.js, Express.js, GitHub, MongoDB, PostgreSQL, Docker, AWS, Google Cloud

Tools: Visual Studio, Visual Studio Code, Arduino IDE, Git, Jenkins, Postman, Cantata