Mohammed Fulwala

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EDUCATION

York University   Sept. 2019 - Oct. 2023

Software Engineering (Specialized Honours) in Big Data - GPA: 3.4/4.0   *Toronto, ON*

- Member of the Dean's Honour Roll.
- Relevant Courses: Object Oriented Programming, Data Structures and Algorithms, Software Development and Design, Operating Systems, Database Systems, Data Mining.

TECHNICAL SKILLS

Languages: Java, C++, Python, SQL, C, C#, JavaScript, R
Tools and Frameworks: React, Flask, PyTorch, Sklearn, Docker, Unity 3D, AWS (Amplify, Cognito, S3, SES, EC2), Gradle, JUnit.

EXPERIENCE

Research Assistant   June 2022 – Present

York University - Elder Lab in Human and Computer Vision   *Toronto, ON*

- Worked on a project to develop a machine learning approach for identifying players in team sports video through their jersey numbers.
- Invented a **CNN** to perform binary classification of player images based on the visibility of their jersey number using a dataset of manually labelled hockey player images.
- Contributed to the field of Computer Vision by individually presenting my findings at the **Lassonde Undergraduate Research Conference 2022**.
- Evaluated existing **Multiple Object Tracking (MOT)** on the hockey dataset to identify players on the field by recognizing their movement patterns. This required reading and understanding relevant papers, adapting open source code to the dataset, and training and evaluating models using **Python** and **PyTorch**.

Teaching Assistant   May 2022 – August 2022

York University   *Toronto, ON*

- Supported over a **100 students** in understanding the fundamental concepts of Operating Systems.
- Assisted the course director by providing office hours, invigilating, grading assessments, and developing course material.
- Demonstrated great time management by working **over 40 hours** as part of the teaching assistant load alongside full-time research position at university.

Software Developer Intern   January 2022 – April 2022

SEQ Technology LLC   *Toronto, ON*

- Constructed a full stack application with a **RESTful API** server from scratch that performs internal admin operations, allowing HR to focus more on HR-focused operations than front office work. Improved efficiency of the department by **50%**.
- Enhanced the security of the application and protected sensitive user data by implementing User Authentication using **Amazon Web Services** tools like **Cognito** and **Amplify**.
- Streamlined the onboarding process at SEQ by inventing an admin portal using Cognito API that allows admins and HR to create new users in the user pool easily.
- Containerized the entire application and managed all services using **Docker**, thus improving the development quality along with maintainability and portability of the application.
- Used **React.js**, **Python**, **Flask** and **MySQL** for the duration of this internship.

PROJECTS

Course Management System | *Java, SQL, JavaFX, Maven* November 2021

- Developed a system software using Java with a **SQLite3** database in the backend to manage a list of students and track their enrollment in courses.
- Leveraged knowledge of **Maven** for build automation and dependency management, and **JavaFX** to design rich client applications.

Allegro Tab Converter | *Java, JavaFX, JacksonXML, CSS, Gradle, JUnit* Jan 2021 – April 2021

- Improved feasibility for the music research community by developing a software system that converts music tablature in text format to a MusicXML file format for use in digital playback programs and websites.
- Leveraged knowledge **Gradle** for build automation and dependency management, and **JavaFX** to design rich client applications that operate consistently across diverse platforms.
- Ensured software quality of the application through thorough unit testing of the application using **JUnit**.

EXTRACURRICULARS

Lassonde Games 2022 Organizer September 2021 – April 2022

- Worked with a team of six students in organizing an interdisciplinary tri-hackathon.
- Executed the creation of competition challenges, advertising, finances, and maintaining robust lines of communication between 136 students and 21 judges in a 100% online setting for three consecutive days.

York Engineering Competition - Communications October 2020

- Placed 3rd in the entire competition.
- Formed a coherent argument with a skilled colleague that clearly identifies the social, economic, political and environmental impacts of the concept of Adverse Selection.