Karim Rhoualem

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Education

Bachelor of Engineering – Computer Engineering (Co-op) - GPA: 3.95 **2018 – April 2022 (Expected)**
Concordia University, Montreal, QC
Courses: Data Structures & Algorithms, Artificial Intelligence (AI), Information Systems Security, Databases, OOP.

Bachelor of Commerce – Finance (With Distinction) **2012 – 2016**
Concordia University, Montreal, QC
Passed CFA Level II Exam

Experience

Alstom, Montreal, QC **April 2021 – Present**
Software Engineer Intern
Full-stack **Universal Windows Platform (UWP)** desktop app development and legacy microservice maintenance in **C#/.NET**.

- Designed UWP and **Windows Presentation Foundation (WPF)** pages using C# for **back-end** and **XAML** for **front-end**.
- Implemented MVVM and dependency injection design patterns to optimize code structure, readability, and efficiency.
- Maintained and extended legacy .NET/ASP.NET microservice codebase
- Led UI design reviews across various functional groups and prepared client technical documentation using **LaTeX**.

Bombardier Transportation, Montreal, QC **May 2020 – April 2021**
Software Engineer Intern
Full-stack .NET development in an Agile/Scrum team with SVN and JIRA for version control, and Jenkins CI/CD DevOps.

- Improved the train's data transmission speeds by over 50% by transforming back-end modules into **multithreaded** (semaphores, mutex, locks) **C#/.NET Core** applications with an integrated **NoSQL** database.
- Reduced field-testing time by integrating a real-time monitoring system on the train dashboard in **ASP.NET** (**SignalR**) and using **Razor Pages, JavaScript,** and **HTML/CSS** for the front-end.
- Implemented test-driven development (unit/integration tests in **MSTest** and **Moq**) to increase project code coverage above 80%.

Projects & Extracurriculars

Data Augmentation for Convolutional Neural Networks – Supervised Research (Proprietary Code) **August 2021 – Present**

- Research paper on the topic of applying blending methods to large image datasets with **OpenCV, Python, and Numpy** to improve object detection convolutional neural networks for images and video feeds.

Exam Invigilation App - https://github.com/karimrhoualem/ExamApp **January 2021 – May 2021**

- Facial recognition app using **Android/Java** for front-end, **Raspberry Pi** + Pi Camera for facial recognition hardware, **Python** (**OpenCV**) for machine learning, and **SQL Server** for database integration.

Space Concordia Canadian CubeSat Project – Command & Data Handling Team **September 2019 – May 2020**

- Collaborated in the **C++** development of a communication dashboard for Space Concordia's Canadian CubeSat Project.

Skills

Programming: C#, Java, Python, JavaScript, C++, SQL, HTML/CSS

Frameworks & Technologies: .NET Core, ASP.NET, UWP, WPF, Django, Flask, React, Android, Git, Jenkins, Linux

Languages: English | Fluently Spoken & Written, French | Fluently Spoken & Written