

# Mohib Amin

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## WORK EXPERIENCE

### SQL Developer Co-op | Environment Climate Change Canada

Jun. 2024 - May. 2025

- Designed and optimized complex SQL queries, stored procedures, functions, and triggers to meet client needs while managing tables, views, indexes, and schemas in production systems.
- Collaborated with developers to support database-driven applications, troubleshoot performance issues, and implement best practices for data security, user roles, and encryption protocols across multiple systems.
- Documented database structures, workflows, and technical best practices to support team knowledge sharing, ensure consistent development standards, and improve onboarding efficiency for new team members.

### Software QA Co-op | Environment Climate Change Canada

May. 2025 - Sept. 2025

- Contributed to continuous improvement of QA processes by integrating automation using Robot Framework.
- Performed functional testing to validate application behavior against business requirements by writing and executing detailed test cases for new features and regression scenarios.
- Used Azure DevOps to track bugs, manage user stories, and organize test plans and test suites while supporting end-to-end testing throughout the software development lifecycle.

## EDUCATION

### Bachelor of Engineering in Computer Engineering

Toronto Metropolitan University (Formerly known as Ryerson University)

Sep. 2021 - Present

- Relevant courses: Software Systems, Computer Programming Fundamentals, Digital Systems, Object Oriented Engineering Analysis and Design, Engineering Algorithms and Data Structures, Database Systems I.

## SKILLS

**Programming Languages:** Java, HTML, CSS, MATLAB, C, JavaScript, SQL, JavaFX, Python, VHDL

**Platform/Tools:** Git, IntelliJ, Linux, National Instruments, Microsoft [Teams, Word, Excel, Powerpoint], Arduino, UNIX

**Certifications:** [CPR Trained](#), [Electronic Arts - Software Engineering Job Simulation](#)

## RELEVANT PROJECTS

### Smart Parking Pathfinder (Senior Design Project - 1st Place) | Arduino, Python (Flask, Socket.IO), JavaScript, HTML, CSS

- Architected a real-time smart parking solution connecting Arduino-based sensors, LED indicators, and servo-controlled gates to a live, browser-based parking map for continuous occupancy monitoring.
- Integrated a Python backend using Flask and Socket.IO to process serial data from hardware and broadcast real-time parking occupancy updates to connected clients with minimal latency.
- Constructed an interactive multi-level parking UI showcasing live availability, spot classifications (EV, accessibility, family), and dynamic counts using responsive front-end components.
- Validated system behavior by implementing a simulation mode and manual update API to test real-time performance, verify data flow integrity, and support efficient debugging without physical hardware.

### AI-Powered NPC Behavior Modeling in Unity | Unity, C#, ML-Agents, Reinforcement Learning

- Designed a Unity-based 3D game environment with adaptive NPCs trained using reinforcement learning, replacing traditional scripted behaviors with dynamic, context-aware decision making during gameplay.
- Implemented AI agents using Unity ML-Agents with custom observation spaces, action spaces, and reward functions to enable intelligent navigation, combat engagement, survival tactics, and responsive player interaction.
- Evaluated AI-driven NPC performance against scripted NPC logic by conducting structured gameplay testing and controlled simulations to assess realism, adaptability, learning efficiency, and overall in-game responsiveness.
- Refined agent behavior through iterative training cycles by tuning reward parameters and behavior policies, improving stability, convergence speed, and consistency while reducing erratic or non-optimal decision patterns.