Mohib Amin

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WORK EXPERIENCE

SQL Developer Co-op | Environment Climate Change Canada　　　　　　　　　　Jun. 2024 - May. 2025

- Designed and optimized complex PL/SQL queries, stored procedures, functions, and triggers within an Oracle relational database to support business logic and data-driven applications.
- Managed and queried relational database objects including tables, views, indexes, and schemas, while improving query performance and ensuring data integrity across production systems.
- Collaborated with developers to support database-backed applications, troubleshoot performance bottlenecks, and implement best practices for access control, roles, and data security.

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.