Haseeb Ahmed Milton, ON | 647-570-8111 | hhaseeb.aahmed006@gmail.com |

linkedin.com/in/haseeb-ahmed-12883a282| github.com/ haseeb00677

Professional Summary

Motivated Engineering student proficient in Python, C, and C++. Versatile experience spanning full-stack web development and autonomous robotics design. Passionate about solving complex problems through hardware-software integration in collaborative environments.

Education

***Bachelor of Engineering*| University of Guelph**

Guelph, ON | Sept 2024 – 2029 (Expected)

Areas of Focus: Systems and Computing Engineering

Relevant Coursework: Data Structures & Algorithms, Object-Oriented Programming, Digital Systems, AWS Cloud Practitioner

Projects Experience

Autonomous Assistive Vehicle Prototype (C, Arduino, AutoCAD)

- **Designed and modeled** the vehicle chassis and mechanical assemblies using AutoCAD, ensuring precise fitment of motors, power systems, and structural components for rapid prototyping.
- **Developed C++ firmware** for Arduino microcontrollers to manage bidirectional motor control, optimizing torque output to enable high-speed travel and consistent traction on steep inclines.
- **Engineered a spring-loaded projectile system** (based on high-tension torsion mechanics) capable of launching targets over 20 feet, integrating a precise trigger mechanism for mobile firing.
- **Optimized drivetrain performance** to support heavy payloads, achieving a towing capacity of approximately 5kg while maintaining stability and maneuverability across obstacle courses.
- **Collaborated within a multidisciplinary team** to produce comprehensive design reports and technical documentation, detailing the iterative testing process, failure analysis, and final system validation.

Corporate Spend Approval Engine (Python, Flask, SQL)

- **Architected a multi-tier transaction** routing system mirroring Brex/Ramp, enabling dynamic approval workflows (e.g., auto-approving **<$50**, routing **>$500** to VPs) to streamline corporate spend
- **Implemented fraud detection algorithms** to identify duplicate transactions and policy violations in real-time, reducing potential financial leakage.
- **Designed an audit-compliant database schema** to track immutable approval logs, ensuring full traceability for financial reporting and compliance.
- **Developed a RESTful API** to handle concurrent approval requests, utilizing transaction locking to prevent race conditions during status updates

2D Physics Simulation Engine (C++ with SFML)

- **Engineered a real-time 2D physics simulation** using C++ and SFML, delivering consistent **60 FPS** performance while implementing accurate gravity effects, collision detection algorithms, and smooth rendering to ensure realistic object interactions.
- **Optimized entity management and memory handling**, enabling support for **50+** simultaneously active objects without frame drops, demonstrating strong proficiency in computational efficiency and resource allocation.
- **Designed modular object-oriented structures** to maximize code reuse, laying the foundation for advanced features like particle systems.
- **Applied debugging, profiling, and iterative testing** techniques to refine system performance and ensure cross-platform stability, showcasing a balance between theoretical physics concepts and practical software engineering execution.

Summary of Skills

- Languages: Python, C, C++, SQL
- Frameworks & Libraries: Flask, SFML, Pandas
- Tools & Platforms: Git, GitHub, AutoCAD, AWS (S3, EC2), Microsoft Office 365, SQLite, Visual Studio Code
- Concepts: Object-Oriented Programming, Data Structures & Algorithms, Database, Management, Cloud Integration, Debugging, Unit Testing
- Languages: English, Urdu, and Hindi