Muhammad Shaaf Yousaf

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Programming Languages: Java, C, Python, HTML, XML, CSS, SQLite
Developer Tools: Git, PyCharm, Intellij, Eclipse, VS Code,Android Studio, Firebase, Blender, Adobe XD, Affinity Designer
Libraries: Flask, Scikit-learn, Matplotlib, Ursina, google.generativeai

EDUCATION

University of Toronto, Scarborough, ON, Canada — January 2023 - Present
Honors Bachelor of Science, Computer Science Specialist (Co-op) - Software Engineering

Relevant Courses: **Software Design** | Introduction to **Databases & Web Applications** | **Calculus** Mathematical Sciences
Certifications:

- **Machine Learning**: Introduction with Regression - Codecademy (issued June 2024)
- Intro to **Cloud Computing** - Codecademy (issued June 2024)

PROJECTS

Carbon Tracking Mobile Application | *Group Project (CSCB07)* | GitHub — September 2024 - December 2024
Technologies: Java, XML, Firebase, Android Studio, GitHub, Git, Affinity Designer

- Developed a fully-featured Android application, which was selected as the **winning project** out of **34 total groups**.
- Implemented core application logic in **Java,** including data collection, data calculation, and data graphing with seamless integration with UI elements to collect information, and update visual elements with updated information.
- Implemented user authentication feature using **Firebase,** with the ability to create, reset, and log-into your account.
- Designed UI in **XML** and **Affinity Designer** (**13** interactive **views**), recognized by Teacher-Assistant as the **best interface** among all groups.

First-Person-Shooter Game | *Alpha Build* | GitHub — April 2024 - April 2024
Technologies: Python, Ursina Game Engine, PyCharm, Blender, Affinity Designer

- Built a 3D game in **Python** using **Ursina** libraries**,** with player controls, enemy AI, and shooting mechanics.
- Designed 3D models, and textures using **Affinity Designer** & **Blender** for enhanced visuals.
- Created enemy **AI** to track & attack the player based on proximity, with health tracking and visual feedback.

Course Website Development | *Solo Project (CSCB20)* — February 2024 - March 2024
Technologies: HTML, CSS, Python, Flask, VS Code, PyCharm

- Developed a course website for CSCB20 in **Python** using **Flask** framework, ensuring **accessibility across devices** and an active greeting feature that adjusts based on user input for over **100 students** enrolled in the course.
- Designed a website using **CSS** (using **Grid** and **Flexbox** libraries), based on **user stories** & **mock-ups** to enhance the overall user experience and easy navigation.
- Wrote a project **Retrospective Report** detailing challenges faced during the project and solutions implemented to improve website functionality and design.

Image Analysis Tool | *Solo Project (CSCA48)* — June 2023 - July 2023
Technologies: C, VS Code

- Developed an image analysis tool in **C**, utilizing a **Quadtree data structure** and **Binary Search Tree (BST)** to decompose images into uniform color regions, allowing for hierarchical image segmentation.
- Acquired practical experience in **algorithm design**, data structures, and image processing techniques, while collaborating with peers for code refinement and **troubleshooting**.