SHIVAM MADAAN

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Education

Bachelor of Computer Science	**Simon Fraser University**	*Burnaby, BC, Canada*

C++ Certified Associate Programmer

- [CPA-21-02] CPA certification by C++ institute

Skills

- C++ | Blueprints | Unreal Engine | Git | Visual Studio | HTML | CSS | JS
- Gameplay Programming | OOP | 3D Math | AI in Games | Data Structures | Algorithms| UI | Version Control | Debugging | Agile | MVC
- Clip Studio Paint | Adobe Photoshop | Maya | Adobe After Effects | Audacity | Figma

Unreal Engine Projects

Role Playing Game   Website | Repo | Boss Fight | Level

- Developed combat mechanics featuring a versatile attack combo system using **visual scripting**, **C++** and **OOP** concepts
- Implemented a state manager and integrated gameplay tags to enhance code management
- Designed and integrated an RPG stat system for comprehensive game statistics
- Implemented tailored character, controller, camera (**3C**) dynamics in specific game scenarios (e.g., boss fight), enhancing player immersion
- Prototyped mob and boss AI enemy types with unique **behavior trees** to enhance gameplay experience
- Implemented **animation blueprints** incorporating blend poses for seamless animation transitions, and configuring IK Retargets for fluid animation transfers

First Person Shooter   Website | Repo | Gameplay

- Designed a 2.5D FPS with 3D movement and 2D elements
- Engineered dynamic sprite rotation with **3D vector math** for seamless integration of 2D sprites in a 3D environment
- Implemented pickup and inventory systems for enhanced player interaction and resource management
- Designed diverse weapons for **realistic gameplay**: shotguns (fragmenting) and machineguns (randomized firing)
- Prototyped diverse **AI NPCs** with specialized behavior trees and custom tasks, covering ranged, melee, and hybrid types
- Crafted an intuitive **UI** and HUD for clear player feedback and information display

Endless Runner: Global Game Jam   Website | Repo | GameJam | Gameplay

- Prototyped an endless runner under 48 hours, showcasing efficient independent work
- Engineered a unique gameplay mechanic involving dynamic input mapping alterations upon item pickup
- Designed character class for endless runner with inner tunnel wall running and customizable controls
- Optimized actor placement via collision-based spawning, streamlining level design through **procedural generation**
- Implemented dynamically replay-able environment with escalating difficulty for engaging gameplay and player involvement

University Projects

Immersive Entertainment System   Course: CMPT 433 | Repo

- Contributed to a team effort in creating an entertainment system, amplifying gaming and movie experiences
- Prototyped and **debugged** a system in C++ that synchronizes smart lights with on-screen content by capturing in-game screenshots
- Developed a Node.js web app with **Agile** methodology that interacts with a C++ application deployed on a microcontroller
- Leveraged Git for **version control**, ensuring effective collaboration and code management throughout the project lifecycle

Slippery: Animated Short Film   Course: IAT 343 | Repo | Video

- Collaborated with a team of three to produce a compelling animated short using Maya over a three-month period
- Developed prototypes, designed elements, and crafted the storyline
- Transformed 2D sketches and mood board references into 3D models
- Modeled, rigged, textured, and animated characters using inverse kinematics

Hobbies

Video Games, Rock Climbing, Swimming, Running, Basketball