SHIVAM MADAAN

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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
- Clip Studio Paint | Adobe Photoshop | Maya | Adobe After Effects | Audacity | Figma

Unreal Engine Projects

Role Playing Game

Website | Repo | Boss Fight | Level

- Prototyped a level inspired by the combat mechanics of Ghost of Tsushima
- Created a character class enabling diverse animations and multiple weapons for distinct combat styles
- Developed a high-caliber attack combo system featuring light, heavy, charge, and jump attacks and target locking
- Integrated a state manager and utilized gameplay tags for efficient code management
- Designed an RPG stat system utilizing maps for efficient game statistics
- Implemented a stamina regeneration feature tied to player actions
- Prototyped mob, heavy and boss enemies with distinct behavior trees

First Person Shooter

Website | Repo | Gameplay

- Developed a 2.5D FPS game prototype with 3D movement mechanics and 2D character/environment elements
- Applied vector math to engineer dynamic sprite rotation based on player's perspective, enabling integration of 2D sprites in a 3D environment
- Engineered a weapon system with dual ammunition types (projectiles and line tracing) and designed a diverse arsenal of weapons
- Developed shotguns with fragmenting capabilities and machineguns featuring randomized firing patterns
- Implemented systems for ammo, weapon, and armor pickups to enhance player interaction and resource management
- Prototyped diverse AI enemy characters with specialized behavior trees and custom tasks, covering ranged, melee, and hybrid types

Endless Runner

Website | Repo | Gameplay

- Prototyped a distinctive endless runner game within a 48-hour time frame for Global Game Jam, showcasing the ability to work efficiently and independently under tight deadlines
- 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
- Developed a collision-based spawning system ensuring precise actor placement on tunnel-like mesh surfaces with correct orientation, streamlining level design by automated placement through code
- Implemented dynamic, infinitely replayable environment with progressive difficulty for engaging gameplay
- Designed diverse obstacles including lava pits, ghost appearances, and electric fences to intensify gameplay challenge and enhance player engagement

University Projects

Immersive Entertainment System

Course: CMPT 433 | Repo

- Contributed to a team effort in creating an Immersive Entertainment System (IES), 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
- Led the development of the web app in Node.js that interacts with the C++ application which is 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 and environments

Education

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

C++ Certified Associate Programmer

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

Interests

Video Games, Rock Climbing, Swimming, Running, Basketball