SHANTANU SHRIPAD MANE - GAMEPLAY PROGRAMMER

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EDUCATION

University of Utah - *Expected Graduation - May 2019*
Pursuing a Masters in Entertainment Arts & Engineering - Game Engineering Track

K.J. Somaiya College of Engineering, Mumbai, India - *June 2015*
Secured a Bachelor of Engineering in Computer Engineering with *First Class Honors*

SKILLS

Programming Languages - C++, C#, Blueprints
Game Engines - Unreal Engine 4, Unity
IDEs - Visual Studio 2015, Visual Studio 2017
Version Control - Perforce, Git
Animation - Maya, Flash
Software Documentation - UML, Dia

GAME PROJECTS

2D Collision System - *Gameplay Tech Programmer - C++* - Feb '18 to May '18 - Portfolio Page

- Created the Collision & gameplay supporting systems for a 2D Game Engine and implemented Pong using it.
- Implemented the Swept Separating Axis Test for collision checks, and two types of responses to them - block & overlap.
- Optimized collision system by updating coordinate transformation matrices only for moveable objects, checking collision of only the ball with other objects & responding to only the earliest collision, capitalizing on the game world being sparse.
- Created libraries of 4x4 Matrix & Vector4 operations for transformations used primarily by collision system.

Combat System Project - *Gameplay Programmer - C++, UE4* - Current Project - Portfolio Page
A combat system similar to that of Bayonetta, focusing on player input and combat mechanics.

- Created a system for chain attacks/combos based on input timing, which is robust enough to allow adding any number of combat moves by designers and chaining between them.
- Improved responsiveness by accepting next attack input before an attack finishes and later executing the 'Pending Attack'.
- Conceptualized an effective system for hit information of attacks to elicit reactions to them from characters.

Memory Manager - *System Programmer - C++* - Oct '18 to Dec '18 - Portfolio Page

- Created a memory manager in C++, with Fixed Size & Dynamic Size Allocators, that passes a robust unit test.
- Implemented Fixed Size Allocators for certain allocation sizes that use arrays of bits to track their memory blocks.
- Optimized bit operations with Compiler Intrinsic instructions to speed up looking through the bit-arrays.
- Created a Dynamic Size Heap Allocator to allocate memory of requested size from the reserved heap of memory.

Warlocks - *Gameplay Programmer - C#, Unity* - Current Project - Portfolio Page
A recreation of a MOBA-esque King-of-the-Hill PvP where you cast spells to fight and defeat other players.

- Created an input system that can switch between input types - selection & movement, spell-casting & targeting types.
- Implemented Object Pools to instantiate spells/abilities before game start to eliminate overhead of on-demand creation.
- Implemented a well-rounded spell system with ability-specific interactions, spell-cast types, spell levels, cast times, and cooldowns and a robust damage system to tie into it.

Project Jericho - *Gameplay Programmer - C++, Blueprints, UE4* - Current Project - Portfolio Page, Project website
An action-adventure game with your fast-paced traversal techniques as tools to conquer giant mechanical monsters.

- Implemented the player character's 'Thrusters' and the mechanics tied to them - a speed boost, their 'fuel', and camera work for high-adrenaline action-style gameplay.
- Contributed to player-side design to create a unique character and resonating empowering abilities that make the player feel elegant and fierce.