ZHEHAO XU

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EDUCATION

University of Southern California, Viterbi School of Engineering Los Angeles, CA
Bachelor of Science, Computer Science (Games) GPA: 3.89/4.0 Expecting: May 2024
Honors: Dean's list (2021 – present)

SKILLS

Programming Languages / Frameworks: C++, C#, Java, Python, HLSL, DirectX, HTML/CSS, JavaScript, MySQL
Version Control Software: Perforce, Git
Game Engines: UEFN, Unreal Engine 4/5, SDL Library, Unity

EXPERIENCE

USC Viterbi School of Engineering Los Angeles, CA
CSCI Course Producer August 2022-December 2023

- **Collaboration**: Collaborate with the professor and assisted a diverse group of 330 students with data structures and object-oriented design.
- **Debugging**: Actively supporting students by debugging their code using Valgrind and GDB in C++, catching bugs or memory leaks to achieve highly functioning code.

Sony Culver City, CA
Summer Technical Associate – Sony Immersive Music Studios June 2023-August 2023

- **Rapid Prototyping**: Employed UEFN and Unreal Engine to quickly create prototypes within a 2-week period that seamlessly merge music and gaming elements that efficiently translate ideas to interactive experiences.
- **Audio Synchronization**: Designed and implemented a robust system of audio synchronization with gameplay using the Sequencer Tool inside of UEFN, achieving innovative gameplay mechanics.

GAME PROJECTS

Oasis Blitz Fall 2023 – Spring 2024

- **Gameplay Mechanics**: Working with a team of 20 people and implementing environmental, character, and enemy AI gameplay mechanics using Hierarchical State Machine and other standard Unity libraries such as DOTween, FMOD, and Cinemachine.
- **Optimization**: Enhanced gameplay performance by profiling and optimizing with object pooling and implementing additive scene loading, resulting in faster scene transitions in Unity.
- **Linear Algebra**: Apply advanced mathematical principles including matrix manipulations, vector math and quaternions to precisely calculate camera rotations, player orientation and enemy facing mechanics, contributing to a seamless player experience.

Multiplayer FPS (Class Project) Fall 2023

- **Networking**: Successfully achieved networking with listen servers and dedicated servers on a First-Person Shooter game, including replicated game mechanics such as chatting, scoring, ammo pickups and more.
- **Unreal Engine Programming**: Mainly programmed in C++ to create fundamental gameplay features while following UE coding conventions and worked with blueprint programming when implementing animations.

Getaway Mobile Game Fall 2023

- **Mobile Development**: Programmed and designed a mobile game using Unity, coded in C# to achieve all gameplay logic including mobile specific touch controls and AI navigation.
- **Gameplay Design**: Achieved an exciting mobile gameplay experience with an emphasis on affordances of touch control, gameplay juice, and a rudimentary ability system.

Simply Rotate Spring 2023

- **Gameplay Engineering**: Led a team of 5 people, designed, and programmed a physics-based 2D puzzle game where you can rotate levels to create solutions, constructed using Unity C# with custom shader graphs to create retro shader effects.
- **Level Design**: Practiced level design principles, successfully conveyed complex gameplay ideas with minimal graphics, and encouraged players to think outside the box to create innovative solutions to puzzles.

Tencent Games Open Course Summer 2022

- **Unreal Engine Development**: Constructed various demos that each demonstrated core skills with Unreal Engine 4, such as animation blending, AI behavior trees, and first-person shooting mechanics.
- **Unreal Engine Mobile Development**: Learned how to package Unreal Engine 4 projects to mobile devices with mobile control interface.

LANGUAGES AND INTERESTS

- **Languages**: *English* – Fluent; *Chinese (Mandarin)* – Native.
- **Interests**: Game Development; Drumming (Mainly Indie Rock); Music Production; Gaming; Skiing.