Tsingtao Zhang

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Profile

A Game Design and Development major student looking for a full-time position in **gameplay programmer and technical artist**. Available from **May 2025**.

Education

Rochester Institute of Technology, Rochester, NY.   Expected May 2025
Game Design and Development, Master of Science.   Current GPA: 3.86
China Agricultural University, Beijing, China.   Sep 2018 – June 2022
Agricultural Structure Environment Engineering, Bachelor of Engineering   GPA: 3.44

Courses

Linear Algebra, calculus, C and C++ programming Language, data Structure, computer graphics, game graphics programming, global illumination, game design, game development process, gameplay and prototyping, applications in virtual reality, Python programming, web technology, Linux, database principles and experiments.

Skills

Skill Sets: Unreal Engine 5, Unity, OpenGL, Direct 3D 11, VR development, Online Gaming, Android Development, OpenXR, CMake, Visual Studio, TCP/IP, Blender, Photoshop, Github, Perforce, Trello, Agile Principle, UI/UX.
Programming Language: C/C++, C#, GLSL, HLSL, Socket, Python, Java, HTML, CSS.

Projects

Duolatera, as Gameplay Programmer & Technical Artist, using Unreal 5.4, C++, Perforce, Online Gaming   Ongoing
- Implemented the online multiplayer gaming feature, allowing 2 players to cooperate remotely.
- Led and implemented 50% of the gameplay mechanisms for VR co-op puzzle solving.
- Designed and managed game asset production pipeline, built IK retargeted animation based on player's movement.
Ocean Simulator, as Graphics Programmer, using OpenGL, GLSL, C/C++   May 2024
- Created a real-time interactive ocean renderer using GLSL in OpenGL with ray-tracing, performing above 30 fps.
- Using linear algebra, 3D vector reflection and refraction, added in a very fast real-time caustics effect which influences the underwater illumination environment, enhancing visual realism.
- Created a clicking-promoted water circle waves on the surface interactively, on top of the default wave patterns.
Purr Decor, as Programmer and Producer, using Unity, C#, Github, Agile Principle   Dec 2023
- Using Unity, implemented a grid-based building system to support precise furniture placement and alignment of furniture, contributing to the main gameplay experience.
- Applied Agile development method, Github and Trello to manage the project, organize daily standups and retrospectives, and coordinate the artist with other programmers, facilitating the prototyping process.
- Bridged gameplay gaps by developing asset selection UI, camera controller, and music & SFX player systems.
Cutie Tower Defense, as Programmer and Technical Artist, using Unity, C#, Github, Blender, Photoshop   July 2023
- Designed and implemented an object pooling system, optimized game performance by 40%.
- Developed tower behaviors and an enemy route-changing system, while working with other programmers, getting rid of 2 redundant helper scripts.
- Set asset importing format and standard, and helped artists to create assets and optimize to game-ready quality.

Experience

VR game development for VR Exercise Research   Rochester Institute of Technology
As Graduate Research Assistant, using Unity, VR dev, Socket, TCP/IP, Android dev.   June - Aug 2024
- Enhanced an existing project by resolving leftover issues and optimizing gameplay, collected data items grew from 2 entries to 5, game time extended from 5 min to 30 min.
- Designed and developed an AI shooter with physics-based aiming and block-avoidance, enabling other researchers to guide users' limb positioning by easily setting the shooting position.
- Collaborating with other researchers, parameterized in-game variables based on user physical measurements and target exercise intensity, enabling real-time dynamic tuning for personalized gameplay.
- To ease the testing process for both subjects and researchers, configured a wireless environment for seamless data transfer and real-time imagery streaming of headset imagery using Socket, reducing data collecting time by 80%.

Extracurricular Activities

Bass in China Agricultural University Choir   Sep 2021 - June 2022
Led weekly practice in bass voice type, participated in 4 performances and 1 national competition with gold price.