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 through Steam.
- Designed and implemented 30% of the gameplay mechanisms for VR co-op puzzle solving.
- Managed game asset production pipeline and led the team of 5 artists. With 3D asset creating skill, established an art bible for artists to reference.
- Designed and implemented procedurally generated texture decoration with spline's auto snapping tool, halved level layout time for level designer and artists.
- Using Unreal IK system, built IK retargeted/predicted animation based on player's movement.
- Implemented cloth simulation for one character using the Chaos Cloth plugin.

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.

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.