Yuxuan Zhang

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Education

University of Southern California Aug. 2025 – May 2027
M.S. Computer Science *Los Angeles, CA*

Huazhong University of Science and Technology Aug. 2021 – Jun. 2025
B. Eng, Biomedical Engineering *Wuhan, China*

Technical Skills

Languages: C/C++, C#, Python, Java, RISC-V, Verilog, MATLAB, HTML/CSS
Developer Tools: Visual Studio, Unity, Unreal, Git, VS Code, Perforce, Google Cloud Platform, Autodesk Maya
Skills: Gameplay Programming, Object-Oriented Programming, Debugging, Game Engine, Tabletop Design

Projects

Shimmer: 2D Platformer Game | *Unity 2D, C#* Oct. 2025 – Present
- Designed and implemented core gameplay, level structure, and narrative flow for a story-driven platformer.
- Built all C# systems from scratch, including player control, layer-switching, save/load, and animated UI.
- Released optimized PC and WebGL builds on Itch.io and TapTap (only Chinese version for now).

Steam Simulator: Clicking Tycoon Game | *Unity 2D, C#* Sep. 2025 – Oct. 2025
- Solely designed and developed a gameplay loop simulating a digital game marketplace with dynamic pricing and economy systems.
- Implemented player progression, event-driven mechanics, and responsive UI; iterated based on player feedback for balance and engagement.
- Delivered the playable demo at Ludum Dare 58 Game Jam.

Game Engine Optimization | *C++, PrimeEngine* Aug. 2025 – Present
- Extended engine's gameplay systems with adaptive NPC AI and modular physics component, including multi-collider, gravity, and collision check.
- Implemented frustum and occlusion culling to improve rendering efficiency and boost frame rate.
- Enhanced animation pipeline to enable seamless blending among full-body, partial, and additive animation layers.

Sword of Frenzy: ARPG Personal Project | *Unreal Engine 5, C++, Blueprint* Sep. 2025 – Present
- Built a full 3C system from scratch in C++ without relying on Unreal Third Person template, featuring lock-on camera, free movement, and dodge mechanics.
- Developed a custom GAS handling dodge, counter-attack, weapon buffs, attribute logic, and effect triggers.
- Created animation state machines and retargeted Paragon assets for eight-direction locomotion and combat.

Experience

AI Medical Imaging Research Assistant Jun. 2024 – May 2025
Huazhong University of S&T, remote with Northwestern University *Wuhan, China*
- Collaborated with the Advanced AI in Medicine and Physics Laboratory (AIMP-Lab), Department of Radiology at Northwestern University, on MRI reconstruction research.
- Developed a deep learning–based MRI reconstruction method using a dual-domain, multi-path, self-supervised diffusion model.
- Manuscript under review for publication. Arxiv pre-print link: https://arxiv.org/pdf/2503.18836.

Game INTEREST

Steam	1500+h	**World of Warcraft**	1000+h
Elden Ring	200+h	**Hollow Knight**	100+h
Overwatch	200+h	**Diablo IV**	100+h
Hearthstone Battleground	150+h	And so many more...	