ZENAN LI

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EDUCATION

University of California, San Diego   Expected Jun. 2026
Master of Science in Computer Science

Huazhong University of Science and Technology   Sept. 2020 – Jun. 2024
Bachelor of Engineering in Software Engineering   GPA: 3.86/4.00

TECHNICAL SKILLS

Programming Languages: C, C++, Python, Go, Assemble, GLSL
Frameworks/Tools: Unity, Ogre, Blender, Houdini, OpenGL, DirectX, Cmake, Git, etc.
Related Courses: Game Engines, Computer Graphics, Principles of Compiler, Operating System, Parallel Computation

WORK EXPERIENCE

Adroit Science and Technology Co., Ltd.   Hangzhou, China
SDE Intern   Jun. 2024 – Aug. 2024

- Upgraded engine from **Ogre 10.x** to **Ogre-next 3.x**, enhancing performance and reducing model import time by **5x**
- Refractor the geometry import module to make it support dyniamic data types and structures.
- Created **particle effects** and **post processing effects** using Ogre-next's compositor and particle system
- Created a sprite-based class to simulate skin fragments after cutting, optimizing with a **class pool** and **batch rendering**
- Applied **Triplanar** rendering with normal and displacement mapping using OGRE's **Hlms**, supporting **cross platform**
- Collaborated with teammates using **Git** for version control, ensuring smooth project management

PROJECT HIGHLIGHTS

Spirit Farer - 3D Mobile Game   Aug. 2022 - Oct. 2022
Tencent Games Open Course for University Students

- Used Unity **UGUI** to make UI system of the 3D mobile phone game, including **Game Controls** and **Functional UI**
- Utilized **Unity Shaders** and the **Particle System** to create visual effects and scene transition effects
- Optimized performance by applying **Light Baking** for static objects and using **LOD (Level of Detail)**, reducing real-time rendering load and improving frame rates by 30%

Cyber-Style Scene on ShaderToy   Jul. 2023 – Jul. 2023
2023 National University of Singapore (NUS) School of Computing Summer Workshop

- Implemented a **Witted Style Ray Tracing** method mixed with **Ray Marching**, using **SDF** to model objects
- Built a scene and accelerated it by using **AABB** and a hard-coded **K-D Tree**, achieved a 100% increase in FPS.
- Simulated retro analog TV effects, including RGB splitting, scanline jitter, etc. in the **Post Processing** of ShaderToy
- Won the **third prize** in the group project for the Real-Time Graphics Rendering summer course

Deadline Lab – 2D Game on Unity   Apr. 2022 – Apr. 2022
Ludum Dare 49

- Utilized Unity's **2D game module** to build Zuma-like game combined with card mechanics 2D game, including **card management** and **level editing**. Implemented **Live2D** using Unity to create a better visual effect
- Used **Plastic SCM** to manage the project and leading to a top 30% ranking

Toy PathTracer   Sept. 2023

- Toy PathTracer from GAMES101, implemented, **BVH-Tree**, **GGX microfacet**, **Multi Importance Sampling**, **Multithread Rendering** based on **OpenMP**
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EXTRACURRICULAR ACTIVITIES & LEADERSHIP

2023 COMAP's Mathematical Contest in Modeling (MCM) – Meritorious Winner   Feb. 2023 – Feb. 2023

- Utilized **Matlab** to developed a Resources Competition Model using the Monod Model, incorporating data to simulate plant resilience in drought cycles, and visualized them. Performed **sensitivity analysis** to optimize long-term stability