Yiwei Zhang

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EDUCATION

The University of California, San Diego 09/2023-Present
Master of Science Programs in Computer Science and Engineering
GPA: 4.00/4.00
The Chinese University of Hong Kong, Shenzhen (CUHKSZ) 09/2018-06/2023
Bachelor of Engineering in Computer Science and Engineering
GPA: 3.68/4.00 (Ranking: 3/103)
Honors: Dean's List (Top 5%), A Level Scholarship (Top 2%), C Level Scholarship(Top 4%)

Related Courses: Computer Architecture, Data Structures, Operating Systems, Database Systems, Software Engineering, Digital Logic and Systems, Computer Graphics, Optimization, Machine Learning, Numerical Analysis, Signals and Systems, Design and Analysis of Algorithm, Parallel Programming, Advanced Image Synthesis, Deep Learning for 3D Data

WORKING EXPERIENCE

XVerse Co. Ltd. Shenzhen, China
Graphics Engine Development Intern Jul 2022 – Dec 2022
- Aimed to optimize hair implementation and hair rendering for the company's own 3D engine XVerse
- Investigated traditional hair rendering models, including the Kajiya model, Marshnner model, and improved double-layer Kajiya highlight model
- Studied the hair rendering case in UE4's metahuman, exported the material from UE4, and reproduced the case effect by writing shaders in Unity and OpenGL
- Completed development of the hair rendering component and integrated it into the XVerse engine

PROJECT EXPERIENCE

Spectral Ray Tracing in Computer Graphics Shenzhen, China
Supervisor: Prof. Qilin Sun, School of Data Science, CUHKSZ Apr 2022 - May 2022
- Implemented an innovative spectral ray tracing method for more realistic rendering by adding multiple physics-based rendering features
- Introduced Wavelength-dependent bidirectional scattering distribution function (BSDF) to achieve dispersion, color temperature, soap bubbles and other effects

Renderer design San Diego, United States
Supervisor: Prof. Tzu-mao Li, Computer Science and Engineering, UCSD Sep 2023 - Dec 2023
- Developed a renderer with C++ and OpenGL that realizes basic geometry drawing, basic transformations, materials, lighting, shadows effects
- Realization included rendering (MSAA, SSAA inverse walk), geometry (Bessel surface fitting, BVH acceleration).

Advanced Renderer design San Diego, United States
Supervisor: Prof. Tzu-mao Li, Computer Science and Engineering, UCSD Dec 2023 - Mar 2024
- Developed a render named La Jolla with C++ and embree.
- ReImplement Disney BSDF, Volumetric Path Tracing and ReSTIR DI on La Jolla Render

GPU Renderer design San Diego, United States
Supervisor: Prof. Ravi Ramamoorthi, Computer Science and Engineering, UCSD Mar 2024 - Jun2024
- Developed a render with Optix on GPU.
- Support different types of light source(point light, directional light and area light) and different types of materials(glass, mirror and diffuse material).
- Featured with GGX, MIS, TTS and Progressive Photon Mapping.

EXTRACURRICULUM ACTIVITIES & MEMBERSHIP

Key Member of College Basketball Team, CUHKSZ Sept 2018 - July2023
Executive of Academic Department, Student Union, CUHKSZ Sept 2018 - Apr 2019

SKILLS

Computer Skills: C/C++, Python, Java, LATEX, Html, CSS, React, Git, Mysql, JavaScript
Design Software: Axure, Visio, Photoshop, Illustrator
Hobbies: Basket Ball, Piano