

# 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, Marshner 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** Shenzhen, China

*Supervisor: Prof. Qilin Sun, School of Data Science, CUHKSZ* Apr 2022 - May 2022

- Developed a renderer with C++ that realizes basic geometry drawing, basic transformations, materials, lighting, shadows effects
- Realization included rendering (MSAA, SSAA inverse walk), geometry (Bessel surface fitting, BVH acceleration) and global lighting (microsurface, glass and mirror materials)

**Social Platform Website: iDiary** Shenzhen, China

*Supervisor: Prof. Pinjia He, School of Data Science, CUHKSZ* Jan 2022 - Apr 2022

- Developed a social platform website with diary as the main content, which allows users to share their lives and thoughts
- Responsible for iDiary front-end development, including user login system, admin management, user homepage, diary content display page, etc.
- Skilled in common front-end component frameworks (React) and code management tools (Git)

**ReSTIR DI** San Diego, United States

*Advanced Image Synthesis - Course Project* Sep 2023 - Dec 2023

- ReImplement ReSTIR DI on La Jolla Render

## EXTRACURRICULUM ACTIVITIES & MEMBERSHIP

Key Member of College Basketball Team, CUHKSZ Sept 2018 - July 2023

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