JIAWEI SONG

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SUMMARY OF QUALIFICATIONS

I am currently a student at the University of Southern California, pursuing a Master's degree in Computer Science, I am self-motivated, passionate about computer graphics and game development, and looking forward to starting my career as a C++ game programmer.

EDUCATION

Master of Computer Science, University of Southern California   Aug. 2021-Present
GPA : 4.0 / 4.0. Related courses: 3D Graphics and Rendering, Game Engine Development, Analysis of Algorithms

Bachelor of Computer Science and Technology, Soochow University   Sept. 2016-June 2020
GPA : 3.7 / 4.0. Related courses: Principles of Operating System, Computer Network, Database

SKILLS

Coding	C++, C, Python, Lua, HLSL, GLSL, Ruby, HTML, CSS, JavaScript, TypeScript
Tools	DirectX, OpenGL, Maya, Node.js, React, Ruby on Rails, Flask, Flutter, Docker, Kubernetes, MongoDB, PostgreSQL, Google Cloud, Azure serverless Functions, Git

PROJECTS

Prime Engine. Course project   Aug. 2022-Dec. 2022

- Modified Prime Engine, a C++ game engine, added features like frustum culling for camera, collision detection and gravity in physics system, and utilized OpenGL API to simulate wind effect
- Improved render pipeline with D3D11 and used compute shader to create realistic water effect

C++ toy renderer. Course project   Jan. 2022-Mar. 2022

- Wrote a renderer from scratch, which can read input triangle and scene JSON data and output a PPM file.
- Implemented Z-buffer, space transformation, smooth shading, texture mapping and anti-aliasing.

Ray tracing renderer in JavaScript. Developer   Mar. 2022-May 2022

- Developed a basic ray tracer in JavaScript and added sphere object and dielectric material
- Adopted photon mapping as a global illumination method, reduced rendering time by 30% and improved image quality of result

An e-commerce application using microservices. Developer   Sep. 2020-Feb. 2021

- Created a microservices architecture app with Express, React, Docker, Kubernetes and MongoDB.
- Implemented functions including authentication, buying, selling, and making payments with Stripe API.
- Tested isolated services with Jest and set up NATS streaming server as an event bus.

EXPERIENCE

Software Engineer Internship   July 2019-Aug. 2019
Suzhou Yulong Information Technologies Co., Ltd.   *Jiangsu Province, China*

- Led a team of 4 people, modified and perfected relevant features of attendance system used by 50+ staff so that administrator could edit and regulations by a Markdown editor and see work time of each staff in one table
- Wrote a demo of bulletin board system based on Ruby on Rails. Implemented functions such as register, log in, post, reply, edit profile and thumb up
- Got familiar with application of Ruby on Rails and Vue.js framework, gems, model–view–controller design pattern and RESTful API. Learned how to communicate in a team and concept of agile software development