Jingtao Huang

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EXPERIENCE

Activision Blizzard, Inc. Jun. 2022 - Present
Graphics R&D Intern Los Angeles, CA

- Work on hand motion capture and synthesis.
- Optimize tools in performance capture pipeline.

Adobe Inc. May 2021 - Aug. 2021
Research Intern - C++, Substance 3D, Github Remote, CA

- Integrated in-house path tracer into internal geometry library.
- Mentored by *Dr. Jérémie Dumas*, *Dr. Vojtěch Krs*, and *Giorgio Gori*.

University of Southern California Jan. 2021 - May 2022
Teaching Assistant Los Angeles, CA

- *Computer Graphics*, CSCI 420, Spring 2021 and Spring 2022.
- *Computer Animation and Simulation*, CSCI 520, Spring 2022.

Detour Bus (A VR comedy Game) May 2020 - May 2021
Engineer - C#, Unity, FMOD, Perforce Remote, CA

- Developed and maintained game features and tools.
- Collaborated with writers, designers, and artists to build 8 levels.

SELECTED PROJECTS

Volume Renderer for Hand Anatomy - **C++, Embree, TBB** Spring 2022

- Implemented ray casting algorithm to visualize hand MRI data.
- Improved image quality by utilizing geometry of interior structures.
- Devised transfer functions for hand tissues.

3D Human Shape and Pose - **C++, OpenGL, ImGui, Git** Fall 2021

- Incorporated statistical human shape model into graphics pipeline.
- Designed graphical user interface to manipulate its shape and pose.

IK with Skinning - **C++, Eigen, ADOL-C, Git** Spring 2021

- Implemented and compared different skinning methods.
- Wrote a inverse kinematic solver to deform characters.

Prime Engine Development - **DirectX, Maya,** Fall 2020

- Performed frustum culling to optimize rendering performance.
- Built skeleton animation blending system and physics component.
- Implemented toon shading, reflection and plant animation.

CPU Ray Tracer - **C++, OpenMP** Spring 2020

- Implemented primitive intersection and illumination.
- Supported anti-aliasing, soft shadows and recursive reflection.
- Optimized rendering speed with BVH and multiprocessing.

EDUCATION

University of Southern California
Jan. 2020 - Aug. 2022 (exp.)
Master of Science in Computer Science
Advised by *Prof. Jernej Barbič*

Beijing Jiaotong University
Sep. 2014 - Jun. 2018
Bachelor of Engineering in Computer Science
Bachelor of Economics in Finance
Outstanding Graduate

Relevant Coursework
Calculus, Linear Algebra
Data Structure, Algorithms
Computer Architecture
High Performance Computing
Augmented, Virtual and Mixed Reality
Computer Graphics
Game Engine Development
Computer Animation and Simulation

SKILLS

Languages
C++, C#, GLSL, LaTeX

Tools
OpenGL, DirectX
Maya, RenderMan, Unity,
CMake, OpenMP, TBB, ImGui
Vim, CLion, Visual Studio
Git, Perforce

Technical
VR Development
Skeletal Animation
Shader Programming
Version Control and Build System
GPU Architecture and Graphics Pipeline
Troubleshooting and Optimization
Game Engine Development

Environments
macOS, Windows 10, Ubuntu

ACTIVITIES

SIGGRAPH 2020 Student Volunteer
USC SIGGRAPH Student Chapter
Viterbi Graduate Mentor