


# Jingtao Huang

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## EXPERIENCE

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

- Work on performance capture for hands.

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

- Improved rendering capabilities of an 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 an 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 Barbic*

**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,  $\text{\LaTeX}$

**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