

# HONGZHU ZHAO

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## RELATED SKILLS

- Shader Development
- Physics-based Simulation
- Mesh Manipulation Algorithms
- Character Animation

## LANGUAGES

- C#
- Python
- ShaderLab
- HLSL
- HTML
- C / C++
- JavaScript
- MEL
- VEX
- CSS

## TOOLS AND FRAMEWORKS

- Unity
- Maya
- Eigen
- Qt
- Git
- UE4
- Houdini
- OpenVDB
- RenderDoc
- Perforce

## COURSES

### GRADUATE

Technical Animation  
Character Technical Animation  
Improvisational Acting  
Visual Story

### UNDERGRAD

Linear Algebra  
Operating Systems  
Algorithms  
Computer Organization  
Software Engineering  
Computer Networks

## EDUCATION

### Carnegie Mellon University, Entertainment Technology Center

Master of Entertainment  
Technology

AUG 2018 – MAY 2020

### University of Science and Technology of China

Bachelor of Engineering in  
Computer Science

AUG 2014 – JUN 2018

## WORK EXPERIENCE

### Industrial Toys (Electronic Arts Inc.)

#### BATTLEFIELD MOBILE – SOFTWARE ENGINEER II (DESTRUCTION)

JUL 2020 – CURRENT

- ▶ Served as the main engineer for architectural destruction (partially destructible structures)
- ▶ Developed tools in Unreal Engine (UE4), Maya, and Houdini to streamline destructible asset authoring pipeline
- ▶ Created a system to apply and re-use Vertex Animation Texture (VAT)-based VFX for partially destructible objects; optimized material for mobile performance and smooth visuals
- ▶ Researched and implemented a run-time solver with Eigen that analyzed structural integrity
- ▶ Modified UE4 source code to provide enhanced object reference and rendering features
- ▶ Worked on custom lighting solutions and conducted investigations on rendering systems

### Tonk Tonk Games

#### UFIGHTER – TECHNICAL ARTIST

MAY 2019 – AUG 2019 AND JAN 2020 – APR 2020

- ▶ Created Unity character rendering shaders which integrate with in-house lighting system
- ▶ Extended the face generation pipeline to enable on-device part morphing
- ▶ Designed and implemented an algorithm to optimize face mesh at run-time
- ▶ Worked with artists to verify, preprocess, and integrate new assets
- ▶ Engineered a run-time skin weight transferring pipeline allowing character facial animations to be played on third-party models with full fidelity
- ▶ Researched and created demos on integrating new technologies such as ARKit 3

### Basically Good Media Lab (Emily Carr University of Art + Design)

#### I AM AFRAID – PROGRAMMER

JUN 2017 – SEP 2017 AND JUN 2018 – AUG 2018

- ▶ Responsible for cleaning up the code base for performance and clarity, creating simple shaders, and troubleshooting technical problems
- ▶ Developed a collaboration system in Unity enabling networked users to manipulate objects in a VR environment
- ▶ Implemented Node.js server for loading and saving user-created worlds in the cloud
- ▶ Art Poster accepted at SIGGRAPH 2018

#### RE: VERB – PROGRAMMER

JUN 2017 – SEP 2017

- ▶ Developed UE4 C++ plugin with Blueprint interface and Python middleware to listen to a performer's dictation and automatically control objects in a virtual world
- ▶ Re:verb was presented during the opening celebration for the new Emily Carr University Campus on Great Northern Way in Vancouver, British Columbia