

# Hongzhu ZHAO

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## Education

Master of Entertainment Technology, Entertainment Technology Center, Carnegie Mellon University (**ETC**, expected May 2020)  
Courses: Technical Animation, Improvisational Acting, Building Virtual World, Visual Story

Bachelor of Engineering in Computer Science, University of Science and Technology of China (**USTC**, 2014 – 2018)  
Courses: Operating Systems, Linear Algebra, Computer Organization, Software Engineering, Computer Networks, etc.

## Projects

- **Cutting Edge** JAN 2019 – CURRENT
  - ▶ A semester long multi-disciplinary team project at the ETC that explores editing techniques in VR
  - ▶ Worked as the tech lead and visual effects programmer in the team
  - ▶ Designed and implemented a camera blending framework that supports Single-Pass rendering in VR using image processing
- **Building Virtual Worlds** SEP 2018 – DEC 2018
  - ▶ Completed 5 rapidly prototyped game projects as a gameplay and visual effects programmer. Each completed in two weeks within multi-disciplinary teams (2 programmers, 2 artists and a sound designer)
  - ▶ Implemented a realistic, cuttable rope in Unity using spring joints and cubic curve interpolation. The part of the rope that is being cut by a laser glows
  - ▶ Implemented a stylized liquid-in-a-container effect by clipping the liquid mesh and the water plane according to the shape of the container and using spring physics to simulate inertia
- **USTC Online Judge** JAN 2017 – JUN 2017
  - ▶ A modern designed website with static front-end pages, cloud API and scalable judge servers, which served 45k+ submissions since launch without any major system failure
  - ▶ Designed the website's appearance and implemented its front-end

## Research / Work Experience

RESEARCH ASSISTANT @ BASICALLY GOOD MEDIA LAB, EMILY CARR UNIVERSITY OF ART + DESIGN

- **I Am Afraid** JUN 2017 – SEP 2017
  - ▶ A Networked VR Application directed by Dr. Maria Lantin. Art Poster accepted by SIGGRAPH 2018
  - ▶ Developed a control and collaboration system in Unity that allows multiple users to grab and place objects naturally in a VR environment
- **Re: Verb** JUN 2017 – SEP 2017
  - ▶ A dance performance interacting with a virtual environment using motion capture, speech analysis, and Unreal Engine 4, directed by Dr. Maria Lantin & Athomas Goldberg
  - ▶ Developed a plugin for UE4 that listens to a performer's dictation (a story) and automatically controls objects in a virtual world

## Honors & Awards

INTERNATIONAL COLLEGIATE PROGRAMMING CONTEST

Silver Medal, 2016 ACM-ICPC China-Final (ranked 1st among all silver awarded teams)

## Skills

Programming Languages: C++ Python C# ShaderLab Ruby HTML/CSS JavaScript MEL VEX  
Software and Frameworks: Unity Unreal Engine OpenGL/CV Maya Houdini Qt AngularJS Git/Perforce  
Graphics-Related Skills: Inverse-Kinematics Physics-based Simulation Shader Development