

EDUCATION

- **Tsinghua University** 08/2015 - 06/2019
 - *Bachelor of Computer Science & Technology*
 - **Overall GPA:** 3.79/4.0
 - **Mathematics Curriculum:** Linear Algebra(4.0); Numerical Analysis(4.0); Elementary Number Theory(4.0); Stochastic Mathematical Methods(4.0); Discrete Mathematics(4.0).
 - **Computer Science Curriculums:** Fundamental Programming(4.0); Data Structures(4.0); Computer Graphics(4.0); Artificial Intelligence(4.0); Computer Networks(4.0); Operating System(4.0); Digital Image Processing(4.0); Computer Architecture(4.0)
- **University of Southern California** 08/2019 - now
 - *Ph.D. Student of Computer Science Department*
 - **Overall GPA:** 4.0/4.0
 - **Curriculums:** Advanced Analysis of Algorithms(4.0); Computer Animation and Simulation(4.0); Augmented, Virtual and Mixed Reality(4.0); Representation Learning: Theory and Practice(4.0).

POSITIONS

- **University of Southern California** 08/2020 - now
 - *Research Assistant, USC Institute for Creative Technologies*
- **SRI International** 6/2020 - 9/2020
 - *Research Intern, Center for Vision Technologies*
- **Tsinghua University** 8/2017 - 6/2019
 - *Research Assistant, Computer Science Department*

TEACHING

- **University of Southern California** 08/2020 - now
 - *Teaching Assistant of Course CSCI 570: Analysis of Algorithms*

SELECTED COURSE PROJECTS

- **A GPU Path-Tracing Renderer Based on Nvidia OptiX** 2/2019 - 5/2019
 - *Group Leader, Supervised by Associate Prof. Kang Chen*
 - Designed and implemented a rendering pipeline that can render pixels in parallel with the support of OptiX.
 - Designed and implemented a simplified version of the V-Ray Material supporting most basic functions, e.g. BRDF, BSDF, and Double-side.
- **An Ocean Simulator & Physics Engine with Distributed Computing** 7/2018 - 8/2018
 - *Group Leader, Supervised by Associate Prof. Kang Chen*
 - Analyzed an ocean simulating method based on Fast Fourier Transformation
 - Designed a physics engine with multiple objects involving buoyancy and collisions
 - Implemented the algorithms mentioned above using the MapReduce framework
- **A Low-Level OS Kernel Fuzzing Tool Based on Syzkaller and kAFL** 4/2018 - 7/2018
 - *Group Leader, Supervised by Associate Prof. Yu Chen*
 - Designed and Implemented a low-level kernel fuzzing tool based on Syzkaller and kAFL
 - Found several elusive bugs in a teaching operating system called Ucore using the tool.
- **A 32-bit MIPS CPU based on FPGA** 10/2017 - 12/2017
 - *Group Leader, Supervised by Prof. Weidong Liu*
 - Implemented a CPU using Verilog that supports 50+ MIPS instructions and several extensions (TLB, Uart communication), which is capable of running the operating system Ucore

- **A 3D Shader based on Ray Tracing, Photon Mapping and Bezier Curves** 05/2017 - 06/2017
Individual project, Supervised by Prof. Shimin Hu
 - Implemented the Ray Tracing algorithm and Photon Mapping using C++ and OpenCV library
 - Rendered various models constructed by the Bezier Surface

PUBLICATIONS

- **Dynamic Facial Asset and Rig Generation from a Single Scan**
Jiaman Li, Zhengfei Kuang*, Yajie Zhao, Mingming He, Karl Bladin, Hao Li*
 - ACM SIGGRAPH Asia 2020. Supervised by Prof. Hao Li, USC
 - Developed an automatic pipeline based on neural models that can generate a high-quality facial asset with multiple expressions and textures given a single scan as input.
- **Probabilistic Projective Association and Semantic Guided Relocalization for Dense Reconstruction**
Sheng Yang, Zheng-Fei Kuang, Yan-Pei Cao, Yu-Kun Lai, Shi-Min Hu
 - ICRA 2019. Supervised by Prof. Shimin Hu, Tsinghua University
 - Co-designed an ICP algorithm based on probabilistic association method with projective features(RGB-D, semantic)
 - Implemented our algorithm and several tools for data generation; did most of the experiments demonstrated in the ICRA submission draft
- **Learning to Reconstruct High-quality 3D Shapes with Cascaded Fully Convolutional Networks**
Yan-Pei Cao, Zheng-Ning Liu*, Zheng-Fei Kuang, Leif Kobbelt, Shi-Min Hu*
 - ECCV 2018. Supervised by Prof. Shimin Hu, Tsinghua University
 - Participated in developing an OctNet-based volumetric reconstruction module which can improve the quality of TSDF data by processing its features
 - Fine-tuned and tested an algorithm named 3D-EPN on our dataset as one of the baselines

AWARDS

- Annerberg Fellowship in 2019 8/2019
- Guang-Yao Scholarship in 2018 (top 10%) 10/2018
- Zhang Weiming Scholarship in 2017 (top 10%) 10/2017
- Yixin Scholarship in 2016 (top 10%) 10/2016
- Gold prize in ACM-ICPC 2013 China Provincial Programming Contest 10/2016
- Gold prize in 2013 China National Olympiad in Informatics 7/2013

EXTRACURRICULAR ACTIVITIES

- Leader of Video & Graphic Design Group in the Department of CS 07/2018 - present
- Member of the Chorus in Tsinghua University 07/2017 - present
- Volunteer of the 2017 sports meeting in Tsinghua University 05/2017
- Member of the Student Union in the Department of CS 09/2016 - 06/2017
- Member of the Astronomy Society in Tsinghua University 09/2016 - 06/2017

SKILLS

- **Programming Skills:** C, C++, Python, Java, CUDA, Shader, MATLAB, JavaScript(Limited) and Lua(limited).
- **Operating Systems:** Linux and Windows.
- **Tools:** PyTorch, Tensorflow, GNU toolchain, Adobe After Effect, Adobe Premiere, Adobe Photoshop, Blender, Unity, Maya, UE4.