

# Siyu Zhang

Portfolio: [siyu-zhang.com](https://siyu-zhang.com)

Github: [github.com/CU2018](https://github.com/CU2018)

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## EDUCATION

- **University of California, Berkeley** Berkeley, CA  
*Master of Engineering - Electrical Engineering and Computer Sciences; GPA: 3.95* 08/2021 - 12/2022
- **University of Pittsburgh** Pittsburgh, PA  
*Bachelor of Science - Computer Sciences; GPA: 3.99* 09/2017 - 12/2020

## PUBLICATIONS

- **GPU Cloth Simulation Pipeline in Lightchaser Animation Studio:** Haowei Han, Meng Sun, **Siyu Zhang**, Dongying Liu, and Tiantian Liu. SIGGRAPH Asia Technical Communications. 2021.

## EXPERIENCE

- **Tencent America** Los Angeles, CA  
*Physics Simulation Programmer (Full-time Intern)* 05/2022 - 08/2022
  - **Fluid Simulation:** Developed a fluid simulation solver using compute shader in Unreal Engine 4
- **Moore Threads Technology Co., Ltd.** Remote  
*R&D Engineer (Part-time Intern)* 02/2022-05/2022
  - **Cloth Simulation:** Developed new features for existing cloth simulation solver
- **Light Chaser Animation Studio** Beijing, China  
*R&D Engineer (Full Intern)* 01/2021 - 07/2021
  - **Cloth Simulation:** Developed a GPU-based (using CUDA) cloth simulation solver in Houdini
- **Huawei Technologies Co., Ltd.** Shenzhen, China  
*Cloud Computing Engineer (Full Intern)* 05/2020 - 08/2020
  - **Augmented Reality Application:** Developed (individually) an AR/VR prototype application for internal rendering testing and demo-use

## PROJECTS

- **Cloth Wrinkles Synthesis Tool** 02/2022 - 05/2022  
*Added a wrinkle synthesis tool and other features for an existing XPBD-based cloth simulator*
  - **Topic/Tech::** Simulation, C++, Houdini
- **Parallelized BVH Construction for Path Tracer** 04/2022 - 05/2022  
*Integrated the GPU parallelized version of BVH construction (using CUDA) for a path tracer*
  - **Topic/Tech::** Acceleration Structure, Rendering, C++, CUDA
- **Real-time Vision Correcting Displays Implemented with Parallel Computing** 09/2021 - 05/2022  
*Accelerated the existing algorithms by parallelization (worked on every platform)*
  - **Topic/Tech::** Parallelization, OpenMP, OpenCV
- **OpenARK: Using Deep-learning based Keypoint Extraction** 09/2022 - 12/2021  
*Evaluated and adapted deep learning based keypoint extraction algorithms to the existing system*
  - **Topic/Tech::** AR, Deep Learning, C++
- **Simple FEM-StVK** 02/2021  
*Implemented a simple version of FEM for simulating StVK material*
  - **Topic/Tech::** Simulation, C++, Houdini
- **Simple PBD-Cloth** 01/2021  
*Accelerated the existing algorithms by parallelization (worked on every platform)*
  - **Topic/Tech::** Simulation, C++, OpenGL
- **C.U Fish** 09/2020 - 11/2020  
*Designed for comparing the pros and cons of ray tracing and rasterization engines in Blender*
  - **Topic/Tech::** Rendering, Blender, ZBrush, Substance Painter

## HONORS

- UC Berkeley College of Engineering Fung Fellowship (3 semesters)

## SKILLS

- **Languages:** C++, C, Python, C#, Java, Matlab, R, JavaScript, HTML, CSS
- **Frameworks&Tools:** CUDA, OpenGL, OpenMP, MPI, Flask, Docker
- **Software:** Houdini, Unreal Engine 4, Blender, Unity