Siyu Zhang

Portfolio: siyu-zhang.com
Github: github.com/CU2018

Email: c_u@berkeley.edu

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

- **Real-time Height-field Simulation of Sand and Water Mixtures**: Haozhe Su, **Siyu Zhang**, Zherong Pan, Mridul Aanjaneya, Xifeng Gao, Kui Wu.   *SIGGRAPH Asia Conference Track. 2023.*

- **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
  Game Client Engineer (Full-time) — *01/2023 - Present*
  - **Water, Sand, Fog, Cloth Simulation**: GPU optimization and physics-based simulation in games

- **Tencent America** — Los Angeles, CA
  Physics Simulation Programmer (Intern) — *05/2022 - 12/2022*
  - **Fluid Simulation**: Developed a fluid simulation solver using compute shaders in Unreal Engine 4
  - **Water & Sand Simulation**: Developed water and sand simulation solver using CUDA

- **Light Chaser Animation Studio** — Beijing, China
  R&D Engineer (Intern) — *01/2021 - 07/2021*
  - **Cloth Simulation**: Developed a GPU-based (using CUDA) cloth simulation solver in Houdini

PROJECTS

- **Cloth Wrinkles Synthesis Tool** — 02/2022 - 05/2022
  Added a wrinkle synthesis tool and other features for an exisiting 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#, HLSL, GLSL, C, Python, Java, Matlab, R, JavaScript, HTML, CSS
- **Frameworks&Tools:**   CUDA, OpenGL, OpenMP, MPI, Docker
- **Software:**   Unreal Engine 4/5, Unity, Blender, Houdini, 3d Max, Maya, ZBrush, Substance Painter