Siyu Zhang

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

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 (Intern) — *08/2022 - Present*
  - **Water & Sand Simulation**: Developing water and sand simulation solver using CUDA
- **Tencent America** — Los Angeles, CA
  Physics Simulation Programmer (Intern) — *05/2022 - 08/2022*
  - **Fluid Simulation**: Developed a fluid simulation solver using compute shaders in Unreal Engine 4
- **Moore Threads Technology Co., Ltd.** — Remote
  R&D Engineer (Intern) — *02/2022-05/2022*
  - **Cloth Simulation**: Developed new features for existing cloth simulation solver
- **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
- **Huawei Technologies Co., Ltd.** — Shenzhen, China
  Cloud Computing Engineer (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 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, Python, C#, Java, Matlab, R, JavaScript, HTML, CSS
- **Frameworks&Tools**: CUDA, OpenGL, OpenMP, MPI, Docker
- **Software**: Houdini, Unreal Engine 4, Blender, Unity, 3d Max, Maya, ZBrush, Substance Painter