

Haomiao Wu

(475) 280-8504 | haomiao.wu@yale.edu | www.cs.yale.edu/homes/wu-haomiao/

EDUCATION

Yale University, New Haven, CT 09/2021 - Present

Ph.D., Department of Computer Science

Selected Courses: Physics Simulation for Movies and Games, Advanced Topics in Computer Graphics

Tsinghua University, China

B.S., Mathematics and Physics:

09/2017 - 07/2021

Selected Courses: Fundamentals of Computer Graphics. Major GPA: 3.85/4.0

RESEARCH EXPERIENCE

Computer Graphics Group, Yale University, *Graduate Researcher* 09/2021-present

• Project: Tiled Eigenfluids, Advisor: Prof. Theodore Kim

Experimenting with efficient mathematical representations of fluid simulation. Built high-quality fluid animation.

• Project: Analysis for Strand and Shell Simulation, Advisor: Prof. Theodore Kim

Using mathematical methods to analyze the dynamics of deformable solid. Provided faster and stabler simulation.

The Graphics and Geometric Computing Group, Tsinghua University, *Undergraduate Researcher* 05/2019-06/2021

• Project: Gradient Domain Monte Carlo Path Tracing Denoising, Advisor: Prof. Kun Xu

Implemented a denoiser of MCMC rendered images and their gradient domain images using an unsupervised CNN.

The Graphics and Imaging Laboratory, University of Washington, *Summer Research Intern* 06/2020-10/2020

• Project: Fabrication Oriented Design Optimization, Advisor: Prof. Adriana Schulz

Designed plug-ins for FreeCAD to generate design variations. Implemented interfaces for the optimization pipeline.

Paper: "Co-Optimization of Design and Fabrication Plans for Carpentry", ACM Trans. Graph. (SIGGRAPH) (2022).

PUBLICATIONS

Haomiao Wu*, Alvin Shi*, Jarred Parr, A.M. Darke, Theodore Kim (* joint 1st authors) (**Best Paper Award**)

Lifted Curls: A Model for Tightly Coiled Hair Simulation, Symposium on Computer Animation (SCA), 2023

Haomiao Wu, Theodore Kim

An Eigenanalysis of Angle-Based Deformation Energies, Symposium on Computer Animation (SCA), 2023

TECHNICAL PROJECTS

Cloth Simulator 04/2022-05/2022

Implemented an FEM cloth simulator from scratch.

Path Tracing Renderer 02/2019-06/2019

Implemented a renderer from scratch using C++, supporting acceleration hierarchy, mesh simplification, etc.

SKILLS

Programming Languages: C/C++, Python, Java, shell, Matlab, Mathematica, Haskell, LaTeX.

Software Tools: Matlab, Mathematica, FreeCAD, MeshLab, OpenGL, Eigen, FFTW, PyTorch, Android Studio, renderers including Mitsuba, Tungsten and Blender