

HAN JIANG

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EDUCATION

The University of Texas at Austin, Austin, TX

(2025-present; expected 2029)

PhD Student in Computer Science

Advisor: Prof. Etienne Vouga; Focus: *Differentiable physic simulation; Digital humans; Shape optimization*

Hong Kong University of Science and Technology, Hong Kong SAR

(2020-2024)

B.S. in Computer Science & Mathematics, First-class Honors

Selected coursework: *Physics-based Simulation, Nonlinear Optimization, Computer Graphics, Graduate Computer Graphics (Geometry Processing & Real-Time Rendering), Differential Geometry*

RESEARCH EXPERIENCE

Reconstruction of Physically Stable Human Hand Grasps, *PhD Research*, UT Austin

(2025-Present)

- Reproduced a differentiable hand-object simulation pipeline; extended NVIDIA Warp XPBD and contact modules; integrated with PyTorch for end-to-end, gradient-based optimization.
- Implemented differentiable robotic grasp-stability metrics and extended them to soft human hands with joint torque limits.

Second-Order Accurate Particle-in-Cell for Fluid Simulation, *Research Intern*, UC Riverside

(2023)

- Proposed a second-order-accurate Material Point Method scheme for fluid simulation, improving accuracy and stability over common baselines.
- Implemented the scheme in C++ and conducted systematic convergence and error analyses across benchmark problems.

INDUSTRY EXPERIENCE

Coohom (Kujiale), *Applied Research Intern (3D Vision & Graphics)*, Hangzhou, China

(Oct-Dec 2024)

- Developed a geometry-processing pipeline that lifted 2D part segmentation from multi-view renders onto 3D furniture meshes, producing part assignments with 90%+ directly usable quality across an in-house asset library.
- Introduced topology-aware label mapping and consolidation on 3D meshes, reducing manual cleanup and improving consistency.
- Integrated the tool into the production pipeline as a reusable utility for model training and downstream applications.

SELECTED UNDERGRADUATE PROJECTS

Neural Scene Registration

(2023)

- Discretized continuous radiance and occupancy fields into multiscale voxel grids, performed classical registration (keypoint detection and RANSAC matching), and trained a network to map 3D keypoints to feature descriptors with rotation-invariant data augmentation.

Text-Guided Neural Scene Inpainting

(2024)

- Lifted 2D inpainting from multiview renders into a 3D scene representation and imposed multiview consistency constraints to improve inpainting quality.

PUBLICATIONS

Han Jiang, Craig Schroeder. Second order accurate particle-in-cell discretization of the Navier-Stokes equations. *Journal of Computational Physics*, 518, 2024.

SKILLS

Languages & Tools: C++, Python (PyTorch, Warp), Git, LaTeX, Maple

COMMUNITY INVOLVEMENT

ACM SIGGRAPH 2025, *Student Volunteer*, Vancouver, Canada

(Aug 2025)

- Supported session logistics, technical sessions and immersive demos, working with exhibiting teams.