





Kaifeng Zhang

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EDUCATION

Columbia University

Ph.D. in Computer Science

08/2024 – Present

Advisor: Yunzhu Li

University of Illinois Urbana-Champaign

Ph.D. in Computer Science

08/2023 – 08/2024

Advisor: Yunzhu Li

- Completed one year of Ph.D. study before transferring to Columbia University.

Tsinghua University

B.Eng. in Computer Science (Yao Class)

09/2019 – 06/2023

GPA: 3.93/4.0

- Visiting student at the University of California, San Diego from 02/2022 to 07/2022.

PUBLICATIONS

PointZero: Zero-Shot Dynamics Prediction from 3D Point Clouds

Bardienus Pieter Duisterhof, **Kaifeng Zhang**, Adam Hung, Bowen Wen, Stan Birchfield, Yunzhu Li, Deva Ramanan, Jeffrey Ichnowski

In submission.

Learning Physics-Guided Residual Dynamics for Deformable Object Simulation

Shivansh Patel, **Kaifeng Zhang**^{*}, Sanjay Pokkali^{*}, Svetlana Lazebnik, Yunzhu Li

In submission.

Real-to-Sim Robot Policy Evaluation with Gaussian Splatting Simulation of Soft-Body Interactions

Kaifeng Zhang^{*}, Shuo Sha^{*}, Hanxiao Jiang, Matthew Loper, Hyunjong Song, Guangyan Cai, Zhuo Xu, Xiaochen Hu, Changxi Zheng, Yunzhu Li

International Conference on Robotics and Automation (ICRA), 2026.

BoxTwin: Learning Elastoplastic Articulated Object Dynamics from Videos

Heng Zhang^{*}, Gehan Zheng^{*}, **Kaifeng Zhang**, Hyunjong Song, Shivansh Patel, Xiaochen Hu, Yunzhu Li, Changxi Zheng, Peter Yichen Chen

IROS Workshop RoDGE, 2025.

PhysTwin: Physics-Informed Reconstruction and Simulation of Deformable Objects from Videos

Hanxiao Jiang, Hao-Yu Hsu, **Kaifeng Zhang**, Hsin-Ni Yu, Shenlong Wang, Yunzhu Li

International Conference on Computer Vision (ICCV), 2025.

Particle-Grid Neural Dynamics for Learning Deformable Object Models from RGB-D Videos

Kaifeng Zhang, Baoyu Li, Kris Hauser, Yunzhu Li

Robotics: Science and Systems (RSS), 2025.

Dynamic 3D Gaussian Tracking for Graph-Based Neural Dynamics Modeling

Mingtong Zhang^{*}, **Kaifeng Zhang**^{*}, Yunzhu Li

Conference on Robot Learning (CoRL), 2024.

AdaptiGraph: Material-Adaptive Graph-Based Neural Dynamics for Robotic Manipulation

Kaifeng Zhang^{*}, Baoyu Li^{*}, Kris Hauser, Yunzhu Li

Robotics: Science and Systems (RSS), 2024 and ICRA RMDO Workshop, 2024 (**Best Abstract Award, Top 1**)

4DRecons: 4D Neural Implicit Deformable Objects Reconstruction from a single RGB-D Camera with Geometrical and Topological Regularizations

Xiaoyan Cong, Haitao Yang, Liyan Chen, **Kaifeng Zhang**, Li Yi, Chandrajit Bajaj, Qixing Huang

Preprint, 2024.

Self-Supervised Geometric Correspondence for Category-Level 6D Object Pose Estimation in the Wild

Kaifeng Zhang, Yang Fu, Shubhankar Borse, Hong Cai, Fatih Porikli, Xiaolong Wang

International Conference on Learning Representations (ICLR), 2023.

Semantic-Aware Fine-Grained Correspondence

Yingdong Hu, Renhao Wang, Kaifeng Zhang, Yang Gao

European Conference on Computer Vision (ECCV), 2022. (Oral presentation)

RESEARCH EXPERIENCE

RoboPIL Lab, Columbia University & UIUC

08/2023 – Present

Graduate Research Assistant

Advisor: Yunzhu Li

- Research focus: robotic manipulation, structured dynamics model, world model, deformable object simulation.
- Building a realistic real-to-sim pipeline for robot policy evaluation, leveraging Gaussian Splatting for rendering and soft-body digital twins for dynamics.
- Developing methods to create soft-body digital twins via neural dynamics models, enabling efficient identification from visual observations, photorealistic rendering, and integration into physics-based simulators. Demonstrated model-based planning using learned dynamics models.

Wang Lab, University of California, San Diego

02/2022 – 07/2023

Undergraduate Research Assistant

Advisor: Xiaolong Wang

- Research focus: 6D object pose estimation, 3D reconstruction, neural rendering.

Tsinghua Vision and Robotics Lab, Tsinghua University

06/2021 – 03/2022

Undergraduate Research Assistant

Advisor: Yang Gao

- Research focus: self-supervised learning, visual representation learning, video object segmentation.

TEACHING EXPERIENCE

COMS W4733: Computational Aspects of Robotics

Columbia University

Instructor: Yunzhu Li

Fall 2025

- Graduate teaching assistant. Delivered a guest lecture on “Simulation and Robotics Software”

WORK EXPERIENCE

World Labs

06/2026 – 09/2026

Research Intern.

Mentor: Chao-Yuan Wu, Fei-Fei Li

SceniX

05/2025 – 08/2025

Research Intern. Topic: Robot policy evaluation with real-to-sim.

Mentor: Yunzhu Li, Changxi Zheng

AWARDS & HONORS

Qualcomm Innovation Fellowship, \$40,000, 1 of 16 winning teams in North America.

05/2025

Best Abstract Award, 4th Workshop on Representing and Manipulating Deformable Objects @ ICRA 2024.

05/2024

Outstanding Graduate, Tsinghua University (Top 10%).

06/2023

Toyota Scholarship, Tsinghua University.

10/2022

Comprehensive Excellence Award, Tsinghua University.

10/2021, 10/2022

Silver Prize, the 35th Chinese Physics Olympiad, Chinese Physical Society.

08/2018

ACADEMIC SERVICE

Journal Reviewer

T-RO, RA-L, IJCV

Conference Reviewer

RSS, CoRL, ICRA, IROS, CVPR, ECCV, ICCV, WACV, BMVC

Workshop Reviewer

SWOMO @ RSS 2025, WM @ ICML 2025, RINO @ CoRL 2025, Digital Twin @ ICCV 2025

Workshop Organizer

Structured World Models for Robotic Manipulation (SWOMO), RSS 2025

Beyond Rigid Worlds: Representing and Interacting with Non-Rigid Objects Workshop (RINO), CoRL 2025

INVITED TALKS

The Helping Hands Lab, Northeastern University <i>Topic: Learning Physically Grounded Dynamics Models for Robotic Manipulation</i>	03/2026
AnySyn3D Webinar <i>Topic: Combining Physics and Learning for 3D Object Modeling and Simulation</i>	09/2025
3DCV Talk Series <i>Topic: Particle-Grid Neural Dynamics for Learning Deformable Object Models from RGB-D Videos</i>	08/2025
TechBeat Talk Series <i>Topic: AdaptiGraph: Material-Adaptive Graph-Based Neural Dynamics for Robotic Manipulation</i>	08/2024

MENTORING

Yiru Wu , NYU M.S.	2026
Jimmy Wang , Columbia B.E.	2026
Qianyi Fan , Columbia M.S.	2026
Jaisel Singh , Columbia M.S.	2025-2026
Shuo Sha , Columbia B.E.	2025
Mingtong Zhang , UIUC M.S. → Princeton Ph.D. Student	2023-2024
Baoyu Li , UIUC M.S. → Georgia Tech Ph.D. Student	2023-2024