

Kaifeng Zhang

✉ kaifeng.z@columbia.edu | 🌐 GitHub | **in** LinkedIn | 🌐 kywind.github.io | 📍 New York, NY

EDUCATION

Columbia University <i>Ph.D. in Computer Science</i>	08/2024 – Present <i>Advisor: Yunzhu Li</i>
University of Illinois Urbana-Champaign <i>Ph.D. in Computer Science</i> <ul style="list-style-type: none">Completed one year of Ph.D. study before transferring to Columbia University.	08/2023 – 08/2024 <i>Advisor: Yunzhu Li</i>
Tsinghua University <i>B.Eng. in Computer Science (Yao Class)</i> <ul style="list-style-type: none">Visiting student at the University of California, San Diego from 02/2022 to 07/2022.	09/2019 – 06/2023 <i>GPA: 3.93/4.0</i>

PUBLICATIONS

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

Bardienus Pieter Duisterhof, **Kaifeng Zhang**, 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.

Incoming

SceniX

05/2025 – 08/2025

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

Supervisor: Yunzhu Li, Changxi Zheng

AWARDS & HONORS

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

03/2026

Topic: Learning Physically Grounded Dynamics Models for Robotic Manipulation

AnySyn3D Webinar

09/2025

Topic: Combining Physics and Learning for 3D Object Modeling and Simulation

3DCV Talk Series

08/2025

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

TechBeat Talk Series

08/2024

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