





# Kaifeng Zhang

@ kaifeng.z@columbia.edu |  GitHub |  LinkedIn |  kywind.github.io |  New York, NY

## EDUCATION

### Columbia University

*Ph.D. student in Computer Science*

Aug 2024 – Present

*Advisor: Yunzhu Li*

### University of Illinois Urbana-Champaign

*Ph.D. Student in Computer Science*

Aug 2023 – Aug 2024

*Advisor: Yunzhu Li*

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

### Tsinghua University

*B.Eng. in Computer Science, Institute for Interdisciplinary Information Sciences*

Sep 2019 – Jun 2023

*GPA: 3.93/4.0*

- Visiting student at the University of California, San Diego from Feb 2022 to Jul 2022.

## PUBLICATIONS

### Particle-Grid Neural Dynamics for Learning Deformable Object Models from Depth Images

**Kaifeng Zhang**, Baoyu Li, Kris Hauser, Yunzhu Li

Robotics: Science and Systems (RSS), 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

in International Conference on Computer Vision (ICCV), 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

*Graduate Research Assistant*

Aug 2023 – Present

*Advisor: Yunzhu Li*

- Research focus: Learning 3D world models for robot manipulation; bridging the gap between simulation and real-world for robot manipulation; deformable object modeling and manipulation.
- Developed Particle-Grid Neural Dynamics, a particle-grid hybrid neural dynamics model for modeling deformable objects, with applications in 3D action-conditioned video generation and model-based planning.
- Developed GS-Dynamics, a method for tracking and modeling deformable objects using 3D Gaussians.
- Developed AdaptiGraph, a material-adaptive graph-based dynamics model for modeling diverse objects, including rigid boxes, ropes, granular objects and cloth.

**Wang Lab, University of California, San Diego***Undergraduate Research Assistant*

Feb 2022 – Jul 2023

*Advisor: Xiaolong Wang*

- Research focus: object 6D pose estimation and 3D reconstruction; novel view synthesis with diffusion and NeRF.

**Tsinghua Vision and Robotics Lab, Tsinghua University***Undergraduate Research Assistant*

Jun 2021 – Mar 2022

*Advisor: Yang Gao*

- Research focus: contrastive learning of visual correspondence; self-supervised video object segmentation.

**WORKING EXPERIENCE**

---

**SceniX, Inc.***Robotics Research Intern*

May 2025 – Present

*Supervisor: Yunzhu Li, Changxi Zheng*

- Developing and optimizing simulators and real-to-sim transferring algorithms for robotic policy training and evaluation, including imitation learning and vision-language-action (VLA) models.
- Building a simulation platform with digital twin identification and Gaussian Splatting-based rendering, capable of handling diverse types of deformable objects such as ropes, cloth, and paper boxes.

**TEACHING EXPERIENCE**

---

**COMS W4733: Computational Aspects of Robotics***Instructor: Yunzhu Li*

Columbia University

*Fall 2025***AWARDS & HONORS**

---

<b>Best Abstract Award</b> , 4th Workshop on Representing and Manipulating Deformable Objects @ ICRA 2024.	05/2024
<b>Outstanding Graduate</b> , Tsinghua University (Top 10%).	06/2023
<b>Comprehensive Excellence Award</b> , Tsinghua University.	10/2021, 10/2022
<b>Xuetang Talents Program Scholarship</b> , Tsinghua University.	10/2020
<b>Freshman Scholarship</b> , Tsinghua University.	10/2019
<b>Silver Prize</b> , the 35th Chinese Physics Olympiad, Chinese Physical Society.	08/2018

**ACADEMIC SERVICE**

---

**Conference Reviewer**

Conference on Computer Vision and Pattern Recognition (CVPR)	2024, 2025
European Conference on Computer Vision (ECCV)	2024
International Conference on Computer Vision (ICCV)	2025
International Conference on Intelligent Robots and Systems (IROS)	2025
Conference on Robot Learning (CoRL)	2025
Winter Conference on Applications of Computer Vision (WACV)	2026

**Workshop Reviewer**

Workshop on Structured World Models for Robotic Manipulation @ RSS	2025
Workshop on Building Physically Plausible World Models @ ICML	2025

**Workshop Organizer**

Workshop on Structured World Models for Robotic Manipulation @ RSS	2025
--	------

**INVITED TALKS**

---

**TechBeat**

08/14/2024

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

---

**Programming Languages:** Python, C, C++**Python Frameworks:** PyTorch, TensorFlow, Warp, Taichi, ROS**Softwares and Tools:** Git, LaTeX, Docker, Blender, Kubernetes