

Ziyu Zhu

Room 107, Jingyuan No.5 Courtyard, Peking University, Beijing, P.R. China 100871

Tel: (+86)17749513817 • Email: 2200012964@stu.pku.edu.cn • Website: [Ziyu Zhu](#)

EDUCATION

PeKing University

Bachelor of Information and Computing Science
GPA: 3.6/4.0

Beijing, China

Sept 2022 – Present (expected Jul 2026)

PUBLICATIONS (* denotes equal contribution)

GarmentLab: A Unified Simulation and Benchmark for Garment Manipulation

Haoran Lu*, Ruihai Wu*, Yitong Li*, Sijie Li, **Ziyu Zhu**, Chuanruo Ning,
Yan Shen, Longzan Luo, Yuanpei Chen, Hao Dong
NeurIPS 2024. [Garmentlab.github.io](https://garmentlab.github.io)

Award: Spotlight Presentation at ICRA 2024 Workshop on Deformable Object Manipulation.

- We propose GarmentLab Environment, a realistic and rich environment for garment manipulation.
- We propose the first real-world garment manipulation benchmark that can be reproduced internationally.
- We integrate different sim2real methods and teleoperation into GarmentLab.

GarmentPile: Point-Level Visual Affordance Guided Retrieval and Adaptation for Cluttered Garments Manipulation

Ruihai Wu*, **Ziyu Zhu***, Yuran Wang*, Yue Chen, Jiarui Wang, Hao Dong
CVPR 2025. [GarmentPile.github.io](https://garmentpile.github.io)

Award: Best Poster Finalist at IROS 2025 Workshop on Robotic Manipulation of Deformable Objects.

- We propose to study the novel task of cluttered garments manipulation and build the pioneering environment.
- We introduce point-level affordance learning for cluttered garments manipulation.
- We further develop the adaptation module guided by affordance to efficiently adapt the cluttered garments.

DexGarmentLab: Dexterous Garment Manipulation Environment with Generalizable Policy

Yuran Wang*, Ruihai Wu*, Yue Chen*, Jiarui Wang, Jiaqi Liang, **Ziyu Zhu**,
Haoran Geng, Jitendra Malik, Pieter Abbeel, Hao Dong
NeurIPS 2025, **Spotlight** [DexGarmentLab.github.io](https://dexgarmentlab.github.io)

- We introduce a realistic simulation environment for bimanual dexterous garment manipulation.
- We propose a new benchmark, and efficient data collection pipeline, and a novel policy framework based on this environment.

Sparse Meets Dense: Correspondence Guided Robotic Manipulation with Rigid-Deformable Interactions

Ziyu Zhu*, Ruihai Wu*, Yue Chen, Xirui Liang, Hojin Bae, Yuran Wang, Hao Dong
Under Review ICRA 2026. sparse-meets-dense.github.io

- We formulate contact-rich interactions between rigid and deformable bodies as optimization problems with keypoint constraints;
- We introduce sparse keypoints and dense correspondences to extract and track task-related physical information;

RESEARCH

Hyperplane Lab, Center on Frontiers of Computing Studies, Peking University

Research Intern - Mentor: *Prof.* Hao Dong and *Dr.* Ruihai Wu

Projects: GarmentPile, Sparse Meets Dense

- Explore the dense representation for dexterous robot manipulation on multiple deformable objects.
- Explore the representation for interactions between rigid and deformable objects.
- Build realistic simulation environments and new benchmarks for deformable objects manipulation.

Summer Intern of University of Illinois Urbana-Champaign

Research Intern - Mentor: *Prof.* Shenlong Wang

Projects: World Model for Robotics

- Develop a transformer-based 3D world model to predict fine-grained interactions between objects.
- Build a large-scale 3D object interaction dataset based on the IsaacLab.
- Explore techniques to improve the model's understanding of object geometry, material, and contact information.

SKILLS

Languages: Chinese (native), English (TOEFL 102, Speaking 25)

Deep Learning Frameworks: Pytorch, Numpy

Simulator: Simulator establishing and using including IsaacSim, IsaacLab

RealWorld Robot: Familiar with real-world robotic arms including Franka, UR, Shadow Hand

HONORS & AWARDS

Peking University Merit Student Award

2025

Huawei Scholarship

2025