Haocheng Yin

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Research Overview

My research goal is to develop intelligent embodied agents that are **generalizable** across diverse tasks and **adaptable** to various unseen environments in the physical world. To address this goal, my current work seeks to cover:

- Analyzing visual representations for robust robot control.
- Designing the generalizable control module for sim-to-real transfer.
- Realizing compositional generative models for effective world modeling.

Research Areas: Robotics, Machine Learning

Education

Georgia Institute of Technology — **Atlanta, GA**
Ph.D. in Robotics — *August 2025 - Present*
Co-adivsed by Prof. Lu Gan, Prof. Yongsheng Chen

ETH Zürich — **Zürich, Switzerland**
M.S. in Computer Science — *September 2021 - October 2024*
GPA: 5.27/6.00

University of Illinois Urbana-Champaign (UIUC) — **Champaign, IL**
B.S. in Electrical Engineering — *September 2017 - May 2021*
ZJU-UIUC Dual Bachelor's Degree Program — GPA: 3.94/4.00

Zhejiang University — **Hangzhou, China**
B.E. in Electrical Engineering & Automation — *September 2017 - June 2021*
ZJU-UIUC Dual Bachelor's Degree Program — GPA: 3.96/4.00

Publications

(∗ indicates equal contribution)

[1] Han Qi, **Haocheng Yin**, Aris Zhu, Yilun Du, and Heng Yang. "Strengthening Generative Robot Policies through Predictive World Modeling". In: *arXiv preprint* (2025). arXiv: 2502.00622 [cs.RO].

[2] Han Qi*, **Haocheng Yin***, and Heng Yang. "Control-oriented Clustering of Visual Latent Representation". In: *The Thirteenth International Conference on Learning Representations (ICLR)*. 2025. arXiv: 2410.05063 [cs.LG].

Research Experience

Lunar Lab, supervised by Prof. Lu Gan — **Georgia Institute of Technology**
Research Project: *Robot Manipulation for Precision Agriculture* — *August 2025 - Present*

Computational Robotics Lab, supervised by Prof. Heng Yang — **Harvard University**
Master Thesis: *Understand and Improve Diffusion Policy for Robot Control* — *February 2025*
ICLR 2025 Spotlight: *Control-Oriented Clustering of Visual Latent Representation*
Research Project: *Strengthening Generative Robot Policies through Predictive World Modeling*

Soft Robotics Lab, supervised by Prof. Robert Katzschmann — **ETH Zürich**
Research Project: *Learning Behavior Priors for Dexterous Manipulation* — *December 2023*

Optimization & Decision Intelligence Lab, supervised by Prof. Niao He — **ETH Zürich**
Research Project: *Bioplausible Meta Reinforcement Learning* — *September 2022*
Research Project: *Inverse Reinforcement Learning from Suboptimal Demonstrations*