Zhao-Heng Yin

HKUST Robotics Institute, Clear Water Bay, Hong Kong, China

✉ zyinag@connect.ust.hk ● 🌐 zhaohengyin.github.io

Document Name: Zhaoheng Yin

Research Summary I study AI and ML for Robotics. I conduct research on reinforcement learning and imitation learning, with their applications in robotics (robotic manipulation, autonomous driving, etc.). I have proposed several imitation learning algorithms that can leverage cross domain data, learn in a sample efficient way by MCTS planning, and generalize better with proper inductive bias.

Education

University of California, Berkeley   **2023 - 2028 (Expected)**

Doctor of Philosophy - Computer Science

The Hong Kong University of Science and Technology   **2021 - 2023**

Master of Philosophy - Electronic and Computer Engineering

○ GPA: 4.16/4.00. Advisor: Prof. Qifeng Chen.
○ Research Intern at Tsinghua Univeristy IIIS. Advisor: Prof. Yang Gao.
○ Research Intern at UC San Diego. Advisor: Prof. Xiaolong Wang.

Nanjing University   **2017 - 2021**

Bachelor of Science - Computer Science (Honored Class) and Mathematics

○ GPA: 4.48/5.00. Advisor: Prof. Wu-Jun Li.
○ Visiting Student at UC Berkeley. Advisor: Prof. Masayoshi Tomizuka.

Selected Publications

The information of the following publications can be found on [my website](). * indicates equal contribution.

1. **Zhao-Heng Yin***, Binghao Huang*, Yuzhe Qin, Qifeng Chen, Xiaolong Wang. "Rotating without Seeing: Towards In-hand Dexterity through Touch". 2023.

2. **Zhao-Heng Yin**, Weirui Ye, Qifeng Chen, Yang Gao. "Planning for Sample Efficient Imitation Learning". In *Neural Information Processing Systems (NeurIPS)*, 2022.

3. **Zhao-Heng Yin**, Lingfeng Sun, Hengbo Ma, Masayoshi Tomizuka, Wu-Jun Li. "Cross Domain Robot Imitation with Invariant Representation". In *IEEE International Conference on Robotics and Automation (ICRA)*, 2022.

4. **Zhao-Heng Yin**, Yang Gao, Qifeng Chen. "Spatial Generalization of Visual Imitation Learning with Position-Invariant Regularization". In *Conference on Robot Learning (CoRL)* workshop on Aligning Robot Representation with Humans (Long Paper), 2022.

5. Yuzhe Qin*, Binghao Huang*, **Zhao-Heng Yin**, Hao Su, Xiaolong Wang. "DexPoint: Generalizable Point Cloud Reinforcement Learning for Sim-to-Real Dexterous Manipulation". In *Conference on Robot Learning (CoRL)*, 2022.

6. **Zhao-Heng Yin***, Lingfeng Sun*, Liting Sun, Masayoshi Tomizuka, Wei Zhan. "Diverse Critical Interaction Generation for Planning and Planner Evaluation". In *IEEE/RSJ Internation Conference on Intelligent Robots and Systems (IROS)*, 2021.

7. **Zhao-Heng Yin**, Wu-Jun Li. "TOMA: Topological Map Abstraction for Reinforcement Learning". *arXiv preprint:2005.06061*, 2020.

Skills

○ **Language:** English, Chinese.
○ **Programming:** C, C++, Python, Java, MATLAB, Verilog HDL, HTML/CSS/Javascript, Shell, TEX.
○ **Toolsets:** Docker, Kubernetes, Git, Linux.
○ **Physics Simulation:** MuJoCo, PyBullet, SAPIEN, IsaacGym.
○ **General Engineering Skills:** 3D Modeling (Solidworks and Blender), Embedded System Design (STM32

and Arduino), ROS, FPGA, Analog Circuit.

Honors and Awards

National Elite Scholarship, China   2020, 2021