

Zhenghao PENG

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LinkedIn Google Scholar

RESEARCH INTERESTS

Reinforcement Learning, Robotics, Multimodal LLM (VLA, VLM) and Human-in-the-loop Learning.

My research focuses on building physically interactive agents that can reason, align with human intent, and generalize across diverse tasks. I aim at building foundation models for robotics—scalable, aligned, and deployable in the real world to improve human well-being.

A detailed [Research Statement](#) is available on my homepage.

Robots Experience: Unitree Go2 Quadruped Robot, Four-wheeled Delivery Robot.

EDUCATION

University of California, Los Angeles (UCLA) *September 2022 - May 2026 (Expected)*

- Ph.D. student at the Department of Computer Science, supervised by [Prof. Bolei Zhou](#).

The Chinese University of Hong Kong (CUHK) *August 2019 - July 2022*

- M.Phil. in Information Engineering, supervised by [Prof. Bolei Zhou](#) at Multimedia Lab (MMLab).

Shanghai Jiao Tong University (SJTU) *Sept. 2015 - July 2019*

- B.Eng. in Naval Architecture and Ocean Engineering. Member of Zhiyuan Honor Program.
- Research assistant supervised by [Prof. Li Jiang](#).

EXPERIENCE

NVIDIA, Santa Clara, CA *June 2025 - Present*

- Research intern in Autonomous Vehicle Group at NVIDIA Research. Manager: [Boris Ivanovic](#).
- Building training and evaluation pipeline for VLA models for autonomous driving. Developing algorithm to improve action alignment and enable counterfactual reasoning.

Waymo LLC, Mountain View, CA *June 2023 - September 2023*

- Research intern in behavior modeling. Mentored by [Justin Fu](#) and [Rowan McAllister](#).
- Improved the average displacement error of multi-agent behavior models by 25% using RL as a closed-loop post-training technique.

**Shenzhen Institutes of Advanced Technology (SIAT),
Chinese Academy of Sciences** *June 2018 - Sept. 2018*

- Research intern at Multimedia Research Center, under the supervision of [Prof. Yu Qiao](#).

OPEN-SOURCE PROJECTS

I am a strong advocate of open-source and reproducible research. Most of my works are released with public code, and my contributions can be found on [GitHub](#). Notably, [MetaDrive](#) is an open-source driving simulator for reinforcement learning and autonomous driving. It has received ~1000 GitHub stars and 350+ citations, and is widely adopted in research community.

AWARDS AND HONORS

- Dissertation Year Award 2025-2026, UCLA
- Amazon Fellowship, 2024-2025, UCLA
- University Fellowship, 2023-2024, 2024-2025, UCLA
- The Outstanding Tutors Award 2021 of the Faculty of Engineering , 2021, CUHK

- Teaching Assistant Award, Term 1 2020 - 2021, Term 2 2020 - 2021, CUHK
- Postgraduate Studentship, 2019 - 2022, CUHK
- Zhiyuan Honors Scholarship, 2015 - 2017, SJTU

SELECTED RESEARCH PAPERS

For the complete list of publications, please visit my [Google Scholar](#).

- [14] **Predictive Preference Learning from Human Interventions.**
Haoyuan Cai, [Zhenghao Peng](#), and Bolei Zhou (**NeurIPS 2025**)
- [13] **Robot-Gated Interactive Imitation Learning with Adaptive Intervention Mechanism.**
Haoyuan Cai, [Zhenghao Peng](#), and Bolei Zhou (**ICML 2025**) [[PDF](#), [Code](#), [Webpage](#)]
- [12] **Embodied Scene Understanding for Vision-Language Models via MetaVQA.**
Weizhen Wang, Chenda Duan, [Zhenghao Peng](#), Yuxin Liu, and Bolei Zhou. (**CVPR 2025**) [[PDF](#), [Code](#), [Webpage](#)]
- [11] **Data-Efficient Learning from Human Interventions for Mobile Robots.**
[Zhenghao Peng](#), Zhizheng Liu, and Bolei Zhou. (**ICRA 2025**) [[Webpage](#), [PDF](#)]
- [10] **Improving Agent Behaviors with RL Fine-tuning for Autonomous Driving.**
[Zhenghao Peng](#), Wenjie Luo, Yiren Lu, Tianyi Shen, Cole Gulino, Ari Seff, and Justin Fu. (**ECCV 2024**) [[PDF](#)]
- [9] **Shared Autonomy with IDA: Interventional Diffusion Assistance.**
Brandon J. McMahan, [Zhenghao Peng](#), Bolei Zhou, and Jonathan C. Kao. (**NeurIPS 2024**) [[PDF](#)]
- [8] **Learning from Active Human Involvement through Proxy Value Propagation.**
[Zhenghao Peng](#), Wenjie Mo, Chenda Duan, Quanyi Li, and Bolei Zhou. (**NeurIPS 2023 Spotlight**) [[PDF](#), [Webpage](#)]
- [7] **ScenarioNet: Open-Source Platform for Large-Scale Traffic Scenario Simulation and Modeling.**
Quanyi Li*, [Zhenghao Peng](#)*, Lan Feng, Zhizheng Liu, Chenda Duan, Wenjie Mo, and Bolei Zhou. (**NeurIPS 2023**) [[PDF](#), [Code](#), [Webpage](#)]
- [6] **Guarded Policy Optimization with Imperfect Online Demonstrations.**
Zhenghai Xue, [Zhenghao Peng](#), Quanyi Li, Zhihan Liu, and Bolei Zhou. (**ICLR 2023**) [[PDF](#), [Code](#), [Webpage](#)]
- [5] **Human-AI Shared Control via Policy Dissection.**
Quanyi Li, [Zhenghao Peng](#), Haibin Wu, Lan Feng, and Bolei Zhou. (**NeurIPS 2022**) [[PDF](#), [Code](#), [Webpage](#)]
- [4] **MetaDrive: Composing Diverse Driving Scenarios for Generalizable Reinforcement Learning.**
Quanyi Li*, [Zhenghao Peng](#)*, Zhenghai Xue, Qihang Zhang, and Bolei Zhou. (**IEEE TPAMI 2021**) [[PDF](#), [Code](#), [Webpage](#)]
- [3] **Safe Driving via Expert Guided Policy Optimization.**
[Zhenghao Peng](#)*, Quanyi Li*, Chunxiao Liu, and Bolei Zhou. (**CoRL 2021**) [[PDF](#), [Code](#), [Webpage](#), [Poster](#)]
- [2] **Learning to Simulate Self-Driven Particles System with Coordinated Policy Optimization.**
[Zhenghao Peng](#), Quanyi Li, Ka Ming Hui, Chunxiao Liu, and Bolei Zhou. (**NeurIPS 2021**) [[PDF](#), [Code](#), [Webpage](#), [Poster](#)]
- [1] **Non-local Policy Optimization via Diversity-regularized Collaborative Exploration.**
[Zhenghao Peng](#), Hao Sun, and Bolei Zhou. (**arXiv 2020**) [[PDF](#)]

TALKS

- Human-in-the-loop Agent Learning, EECS 598: Action and Perception Guest Lecture, invited by: Stella Yu, May 2024

TEACHING EXPERIENCES

- CS260R Reinforcement Learning, UCLA, 2025 Winter
- CS260R Reinforcement Learning, UCLA, 2023 Fall
- CS269 Seminar on Reinforcement Learning, UCLA, 2022 Fall
- IERG5350 Reinforcement Learning, CUHK, Term 1, 2021-22
- CSCI2100E Data Structures, CUHK, Term 2, 2020-21
- IERG5350 Reinforcement Learning, CUHK, Term 1, 2020-21
- IERG6130 Seminar on Reinforcement Learning, CUHK, Term 2, 2019-20

MISCELLANEOUS

- **Reviewer:** NeurIPS, ICML, CVPR, ECCV, ICLR, CoRL, RSS, IROS, ICRA, AAAI, TNNLS, IJCV, ICCV, RA-L, *etc.*
- **Frameworks:** PyTorch, Jax, TensorFlow, Ray, RLLib, Keras, ROS2, *etc.*
- **Skills:** \LaTeX , Keynote, Photoshop, Final Cut Pro, Git, Cantonese, Photography, *etc.*