Haoqi Yuan

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Education

Peking University - School of Computer Science: *Ph.D. Candidate* 2021.9 - Present

- Supervisor: Professor Zongqing Lu
- Research Area: Reinforcement Learning
- Twice awarded the Peking University Presidential Scholarship.

Peking University - Turing Class: *Bachelor's Degree* 2017.9 - 2021.7

- Major: Computer Science and Technology, GPA ranked 14th/232
- Received National Scholarship and Peking University Outstanding Student Award.

Research Papers

Haoqi Yuan, Yu Bai, Yuhui Fu, Bohan Zhou, Yicheng Feng, Xinrun Xu, Yi Zhan, Börje F. Karlsson, Zongqing Lu. Being-0: A Humanoid Robotic Agent with Vision-Language Models and Modular Skills, 2025.

- We propose a hierarchical agent framework for humanoid robots, solving long-horizon, embodied tasks autonomously.

Haoqi Yuan, Bohan Zhou, Yuhui Fu, Zongqing Lu. Cross-Embodiment Dexterous Grasping with Reinforcement Learning, 2024.

- **First Author**, accepted at **ICLR 2025**.
- We propose a reinforcement learning method for training cross-embodiment dexterous grasping policies.

Haoqi Yuan, Yuhui Fu, Feiyang Xie, Zongqing Lu. Pre-Trained Multi-Goal Transformers with Prompt Optimization for Efficient Online Adaptation, 2024.

- **First Author**, accepted at **NeurIPS 2024**.
- We propose a pre-training and fine-tuning method for reinforcement learning that efficiently explores and adapts to long-horizon tasks.

Haoqi Yuan, Zhancun Mu, Feiyang Xie, Zongqing Lu. Pre-Training Goal-Based Models for Sample-Efficient Reinforcement Learning, 2024.

- **First Author**, accepted at **ICLR 2024**, selected for **oral presentation (acceptance rate 1.2%)**
- We propose pre-training goal-based models to efficiently learn bi-level policies for solving long-horizon tasks in open-world environments.

Haoqi Yuan, Chi Zhang, Hongcheng Wang, Feiyang Xie, Penglin Cai, Hao Dong, Zongqing Lu. Plan4MC: Skill Reinforcement Learning and Planning for Open-World Minecraft Tasks, 2023.

- **First Author**, accepted at **NeurIPS 2023 Workshop**
- We develop an open-world agent that integrates LLM-assisted planning and reinforcement learning, solving 40 challenging tasks in Minecraft.

Haoqi Yuan, Zongqing Lu. Robust Task Representations for Offline Meta-Reinforcement Learning via Contrastive Learning, 2022.

- **First Author**, accepted at **ICML 2022**
- We proposed a task representation method combining contrastive learning and generative models to address distribution shift issues in offline meta-reinforcement learning.

Haoqi Yuan, Ruihai Wu, Andrew Zhao, Haipeng Zhang, Zihan Ding, Hao Dong. DMotion: Robotic Visuomotor Control with Unsupervised Forward Model Learned from Videos, 2021.

- **First Author**, accepted at **IROS 2021**
- We present a data-efficient approach for model-based control by learning motion representations and world models from unsupervised videos.

Ziye Huang, **Haoqi Yuan**, Yuhui Fu, Zongqing Lu. Efficient Residual Learning with Mixture-of-Experts for Universal Dexterous Grasping, 2024.

- Accepted at **ICLR 2025**
- We propose a universal dexterous grasping method based on residual policy learning and mixture-of-experts, achieving SOTA performance on DexGraspNet.

Shaoteng Liu, **Haoqi Yuan**, Minda Hu, Yanwei Li, Yukang Chen, Shu Liu, Zongqing Lu, Jiaya Jia. RL-GPT: Integrating Reinforcement Learning and Code-as-policy, 2024.

- Accepted at **NeurIPS 2024**, selected for **oral presentation**
- We propose using reinforcement learning as a tool for LLM-based agents. Our agent is the first to autonomously learn to mine diamonds in Minecraft without supervision.

Chi Zhang, Penglin Cai, Yuhui Fu, **Haoqi Yuan**, Zongqing Lu. Creative Agents: Empowering Agents with Imagination for Creative Tasks, 2025.

- Accepted at **UAI 2025**.
- We develop a framework and benchmark for creative agents, equipping them with imagination through generative models and LLMs.

Hao Luo, Yicheng Feng, Wanpeng Zhang, Sipeng Zheng, Ye Wang, **Haoqi Yuan**, Jiazheng Liu, Chaoyi Xu, Qin Jin, Zongqing Lu. Being-H0: Vision-Language-Action Pretraining from Large-Scale Human Videos, 2025.

- The first VLA foundation model trained on large-scale human videos and hand motions, efficiently transferring to robotic dexterous manipulation tasks.

Bohan Zhou, **Haoqi Yuan**, Yuhui Fu, Zongqing Lu. Learning Diverse Bimanual Dexterous Manipulation Skills from Human Demonstrations, 2024.

- We propose a scalable method for learning bimanual dexterous manipulation, which automatically constructs tasks from human videos and trains reinforcement learning policies.

Internships

BeingBeyond 2025 - Present

- Study dexterous manipulation and agents for humanoid robots.

Beijing Academy of Artificial Intelligence (BAAI) 2023 - 2025

- Study efficient RL and Foundation Models for open-world agents.
- Study RL for dexterous manipulation.

Awards and Honors

Luo Yuehua Scholarship 2024

Award for Scientific Research, Peking University 2024

Outstanding Student, National Engineering Research Center of Visual Technology 2022

Award for Scientific Research, Peking University 2022

Peking University Presidential Scholarship 2022

Peking University Presidential Scholarship 2021

John Hopcroft Scholarship 2020

Peking University Turing Class Scholarship 2019

National Scholarship 2018

Outstanding Student, Peking University 2018