Qiayuan Liao

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Education

2023–Present	**Ph.D. Student Mechanical Engineering**, *University of California, Berkeley*, Berkeley. Advisor: Koushil Sreenath Major: Controls
2019–2023	**B.E Mechatronics Engineering**, *Guangdong University of Technology*, China.

Professional Experience

Academic

2022–2023	**Undergraduate Researcher**, *Hybrid Robotics (Prof. Koushil Sreenath)*, University of California, Berkeley.
2021–2023	**Undergraduate Researcher**, *CLEAR Lab (Prof. Wei Zhang)*, Southern University of Science and Technology.
2019–2021	**Captain & Founder**, *DynamicX Robot Team*, Guangdong University of Technology

Publications

Conference Proceedings

[C1] **Qiayuan Liao**, Bike Zhang, Xuanyu Huang, Xiaoyu Huang, Zhongyu Li, and Koushil Sreenath. Berkeley humanoid: A research platform for learning-based control. *arXiv preprint arXiv:2407.21781*, 2024.

[C2] Kevin Zakka, Baruch Tabanpour, **Qiayuan Liao**, Mustafa Haiderbhai, Samuel Holt, Jing Yuan Luo, Arthur Allshire, Erik Frey, Koushil Sreenath, Lueder A. Kahrs, Carlo Sferrazza, Yuval Tassa, and Pieter Abbeel. Mujoco playground: An open-source framework for gpu-accelerated robot learning and sim-to-real transfer., 2025.

[C3] **Qiayuan Liao**, Zhongyu Li, Akshay Thirugnanam, Jun Zeng, and Koushil Sreenath. Walking in narrow spaces: Safety-critical locomotion control for quadrupedal robots with duality-based optimization. In *2023 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 2723–2730. IEEE, 2023.

[C4] **Qiayuan Liao**, Zhefeng Cao, Hua Chen, and Wei Zhang. Real-time trajectory optimization and control for ball bumping with quadruped robots. *arXiv preprint arXiv:2210.05195*, 2022.

[C5] Zhi Su, Xiaoyu Huang, Daniel Ordoñez-Apraez, Yunfei Li, Zhongyu Li, **Qiayuan Liao**, Giulio Turrisi, Massimiliano Pontil, Claudio Semini, Yi Wu, et al. Leveraging symmetry in rl-based legged locomotion control. *arXiv preprint arXiv:2403.17320*, 2024.

[C6] Zixuan Chen, Xialin He, Yen-Jen Wang, **Qiayuan Liao**, Yanjie Ze, Zhongyu Li, S Shankar Sastry, Jiajun Wu, Koushil Sreenath, Saurabh Gupta, et al. Learning smooth humanoid locomotion through lipschitz-constrained policies. *arXiv preprint arXiv:2410.11825*, 2024.

[C7] Kanghyun Ryu, **Qiayuan Liao**, Zhongyu Li, Koushil Sreenath, and Negar Mehr. Curricullm: Automatic task curricula design for learning complex robot skills using large language models. *arXiv preprint arXiv:2409.18382*, 2024.

[C8] Xiaoyu Huang, **Qiayuan Liao**, Yiming Ni, Zhongyu Li, Laura Smith, Sergey Levine, Xue Bin Peng, and Koushil Sreenath. Hilma-res: A general hierarchical framework via residual rl

for combining quadrupedal locomotion and manipulation. In *2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 9050–9057. IEEE, 2024.

Selected Open Source Softwares

[S1] MuJoCo Playground. [code],.

[S2] legged_control: a Nonlinear MPC, WBC framework for legged robot based on OCS2, and ros controls. [code], [video].

[S3] rm-controls: a software stack based on ros-controls for controlling RoboMaster robots. [code], [docs].

Awards and Honors

2024	**Fellowship**, *Dept. of Mechanical Engineering*, University of California, Berkeley.	
2021	RoboMaster University Championship (more than 200 Chinese teams at the time)	*Top 32*
2019	RoboMater Winter Camp for High School Students	*Champion*
2018	Denmark Young Scientists Fair and Contest	*1st Place*