

Xiang Zheng

CONTACT INFORMATION	G2322, AC1 City University of Hong Kong Kowloon, Hong Kong	
RESEARCH INTERESTS	Reinforcement Learning, Trustworthy AI, AI Red Teaming	
EDUCATION	City University of Hong Kong , Hong Kong, China <i>Ph.D. in Computer Science</i> Supervisor: Prof. Cong Wang Fields: Reinforcement Learning, AI Security GPA: 4.00/4.00	2020-present
	Tsinghua University , Beijing, China <i>M.S. in Control Science and Engineering</i> Supervisor: Prof. Tao Zhang Fields: Robot Learning GPA: 3.55/4.00	2016-2019
	Beihang University , Beijing, China <i>B.S. in Automation, Second B.S. in Mathematics</i> Selected into Honors College (1/200) GPA: 3.74/4.00 (Total 222.5 credits)	2012-2016
RESEARCH & WORK EXPERIENCE	City University of Hong Kong , Hong Kong, China <i>Graduate Research Assistant</i> Supervisor: Prof. Cong Wang Topic: Efficient exploration strategies for reinforcement learning <ul style="list-style-type: none">• Designed constrained intrinsic motivation for unsupervised reinforcement learning. This work is accepted by IJCAI 2024.• Task-aware intrinsic motivation for sparse-reward reinforcement learning. This work is submitted to NeurIPS 2024.• Developed intrinsically motivated adversarial policy against robotic RL agents. This work is accepted by DSN 2024.• Explored intrinsically motivated red teaming for Large Language Models. This work is submitted to NeurIPS 2024.	2020-present
	Xi'an Jiaotong University , Xi'an, China <i>Visiting Researcher</i> Supervised by Prof. Chao Shen Topic: Efficient and robust reinforcement learning	2022-2023

Huawei , Xi'an, China <i>Senior Researcher</i> Topic: Cloud computing resource scheduling	2020
Xi'an Jiaotong University , Xi'an, China <i>Visiting Researcher</i> Supervised by Prof. Chao Shen Topic: Adversarial machine learning	2019
Rich AI Technology , Beijing, China <i>Research Intern</i> Topic: Text summarization via Transformer	2019
National Institute of Informatics , Tokyo, Japan <i>Research Intern</i> Supervised by Prof. Tetsunari Inamura Topic: Robot navigation and control with ROS and YOLO	2018
The University of New South Wales , Sydney, Australia <i>Research Intern</i> Supervised by Prof. Elias Aboutanios Topic: Spacecraft de-orbiting control	2016

PUBLICATION **Journal**

- J-1. Yuxue Cao, Shengjie Wang, **Xiang Zheng**, Wenke Ma, Xinru Xie, Lei Liu, “Reinforcement learning with prior policy guidance for motion planning of dual-arm free-floating space robot,” *Aerospace Science and Technology*, vol. 136, pp. 108098, 2023.
Impact Factor 5.6, JCR Rank Q1 (3/34).
- J-2. Shengjie Wang, Yuxue Cao, **Xiang Zheng**, Tao Zhang, “A learning system for motion planning of free-float dual-arm space manipulator towards non-cooperative object,” *Aerospace Science and Technology*, vol. 131, pp. 107980, 2022.
Impact Factor 5.6, JCR Rank Q1 (3/34).
- J-3. Shengjie Wang, Yuxue Cao, **Xiang Zheng**, Tao Zhang, “Collision-free trajectory planning for a 6-DoF free-floating space robot via hierarchical decoupling optimization,” *IEEE Robotics and Automation Letters (RA-L)*, vol. 7, no. 2, pp. 4953–4960, 2022.
Impact Factor 5.2, JCR Rank Q2 (10/30).

Conference

- C-1. **Xiang Zheng**, Xingjun Ma, Chao Shen, and Cong Wang, “Constrained

intrinsic motivation for reinforcement learning,” in *Proceedings of the 33rd International Joint Conference on Artificial Intelligence (IJCAI)*, 2024.

- C-2. **Xiang Zheng**, Xingjun Ma, Shengjie Wang, Xinyu Wang, Chao Shen, and Cong Wang, “Toward evaluating robustness of reinforcement learning with adversarial policy,” in *Proceedings of the 54th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN)*, 2024.

Acceptance Rate 20.7%

- C-3. Shengjie Wang, Fengbo Lan, **Xiang Zheng**, Yuxue Cao, Oluwatosin Oseni, Haotian Xu, Tao Zhang, Yang Gao, “A policy optimization method towards optimal-time stability,” in *Proceedings of the 7th Conference on Robot Learning (CoRL)*, 2023.

- C-4. Shengjie Wang, **Xiang Zheng**, Yuxue Cao, Tao Zhang, “A Multi-Target Trajectory planning of a 6-DoF free-floating space robot via reinforcement learning,” in *Proc. of the 34th IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2021.

- C-5. Shengjie Wang, Yuxue Cao, **Xiang Zheng**, Tao Zhang, “An end-to-end trajectory planning strategy for free-floating space robots,” in *Proc. of the 40th Chinese Control Conference (CCC)*, 2021.

- C-6. Shihao Zhao, Xingjun Ma, Xiang Zheng, James Bailey, Jingjing Chen, Yu-Gang Jiang, “Clean-label backdoor attacks on video recognition models,” in *Proc. of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2020.

Acceptance Rate 22.1%

- C-7. Xiang Zheng, Ziwei Wang, Tao Zhang, “Robust finite-time attitude tracking control for nonlinear quadrotor with uncertainties and delays,” in *Proc. of IEEE International Conference on Robotics and Biomimetics (ROBIO)*, 2017.

AWARDS &

HONORS

IJCAI Travel Grant

2024

IJCAI Organization and AIJ Division

Amount: USD 500

International Conference Grant

2024

City University of Hong Kong

Amount: HKD 10,000

DSN Student Travel Grant

2024

DSN Student Travel Awards Committee

Amount: USD 1,500

Research Activities Fund

2022-2023

City University of Hong Kong

Amount: HKD 96,000

	Institutional Research Tuition Grant City University of Hong Kong Amount: HKD 168,384	2020-2024
	CityU Presidential PhD Scholarship City University of Hong Kong Amount: HKD 1,353,120	2020-2024
	NII MOU Research Activities Grant National Institute of Informatics, Japan Amount: JPY 68,400	2018
	CSC Scholarship China Scholarship Council Amount: AUD 6,400	2016
TEACHING & EXPERIENCE	Teaching Assistant , City University of Hong Kong CS5293, Topics on Information Security	Semester B 2023/24
	Teaching Assistant , City University of Hong Kong CS4394, Information Security and Management	Semester A 2023/24
	Teaching Assistant , City University of Hong Kong CS4293, Topics in Cybersecurity CS5293, Topics on Information Security	Semester B 2021/22
	Teaching Assistant , City University of Hong Kong CS4394, Information Security and Management CS5294, Information Security Technology Management	Semester A 2021/22
	Teaching Assistant , City University of Hong Kong CS4293, Topics in Cybersecurity CS6290, Privacy-enhancing Technologies	Semester B 2020/21
	Teaching Assistant , City University of Hong Kong CS2310 / CS2311, Computer Programming	Semester A 2020/21
MISC.	Language: Python, C/C++ Framework: PyTorch Simulator: MuJoCo Platform: Tianshou, Stable Baselines, CleanRL, TRL, etc. Environment: Linux/Unix, macOS and Windows Fluent in English and Chinese	