Xiang Zheng

CONTACT
INFORMATION

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City University of Hong Kong
Kowloon, Hong Kong

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RESEARCH
INTERESTS

Reinforcement Learning, Trustworthy AI, AI Red Teaming

EDUCATION

City University of Hong Kong, Hong Kong, China — **2020-present**
Ph.D. in Computer Science
Supervisor: Prof. Cong Wang
Fields: Reinforcement Learning, AI Security
GPA: 4.00/4.00

Tsinghua University, Beijing, China — **2016-2019**
M.S. in Control Science and Engineering
Supervisor: Prof. Tao Zhang
Fields: Robot Learning
GPA: 3.55/4.00

Beihang University, Beijing, China — **2012-2016**
B.S. in Automation, Second B.S. in Mathematics
Selected into Honors College (1/200)
GPA: 3.74/4.00 (Total 222.5 credits)

RESEARCH &
WORK
EXPERIENCE

City University of Hong Kong, Hong Kong, China — **2020-present**
Graduate Research Assistant
Supervisor: Prof. Cong Wang
Topic: Efficient exploration strategies for reinforcement learning
- 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.

Xi'an Jiaotong University, Xi'an, China — **2022-2023**
Visiting Researcher
Supervised by Prof. Chao Shen
Topic: Efficient and robust reinforcement learning

Huawei, Xi'an, China   **2020**
Senior Researcher
Topic: Cloud computing resource scheduling

Xi'an Jiaotong University, Xi'an, China   **2019**
Visiting Researcher
Supervised by Prof. Chao Shen
Topic: Adversarial machine learning

Rich AI Technology, Beijing, China   **2019**
NLP Intern
Topic: Text summarization via Transformers

National Institute of Informatics, Tokyo, Japan   **2018**
Research Intern
Supervised by Prof. Tetsunari Inamura
Topic: Indoor service robot navigation and control

The University of New South Wales, Sydney, Australia   **2016**
Student Intern
Supervised by Prof. Elias Aboutanios
Topic: Spacecraft orbit control

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 IJCAI Organization and AIJ Division Amount: USD 500	**2024**
	Conference Grant City University of Hong Kong Amount: HKD 10,000	**2024**
	DSN Student Travel Grant DSN Student Travel Awards Committee Amount: USD 1,500	**2024**
	Research Activities Fund City University of Hong Kong Amount: HKD 96,000	**2022-2023**

	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**
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	