

Tianying Ji (嵇天颖)

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EDUCATION

- Tsinghua University** Beijing, China
Bachelor of Engineering, Computer Science and Technology Sept. 2016 - June 2020
 - Tsinghua University** Beijing, China
Ph.D., Computer Science and Technology Sept. 2020 - June. 2025
Supervisor: **Professor Fuchun Sun**
The State Key Laboratory of Intelligent Technology and Systems
Outstanding Graduate, Department of Computer Science and Technology, Tsinghua University
- Research Interest:** Reinforcement Learning, Robotics.
Relevant Courses: Computer Control Theory and Applications (A); Foundations of Artificial Intelligence (A); Robotic Cognitive Computation (A); Computational Intelligence and Robotics (A); Methods of Optimization (A); etc.
Teaching Assistant: Foundations of Artificial Intelligence (2021, 2022, 2023); System Analysis and Control (2020); Cognitive Robotics (2021).

RESEARCH GRANTS & ACADEMIC POSITIONS

- Intelligent Control of Complex Systems, Robotic Cognitive Systems, and Information Processing** (复杂系统智能控制、机器人认知系统及信息处理)
Key Project - “Zhichuang” Fund (军委科技委重大专项-智创基金, 201-CXCY-A01-08-02-03)
Project Leader. Secured funding and led my team to exceed all research targets. (2020.01 - 2022.12)
- Program Committee / Reviewer:** NeurIPS (2023, 2024), ICML (2024, 2025), ICLR (2024, 2025), IJCAI (2024), ICRA (2025), AAAI (2025), AISTATS (2025), RLC (2025).

SELECTED PUBLICATIONS

- ACE: Off-Policy Actor-Critic with Causality-Aware Entropy Regularization.**
Tianying Ji*, Yongyuan Liang*, Yan Zeng, Yu Luo, Guowei Xu, Jiawei Guo, Ruijie Zheng, Furong Huang, Fuchun Sun, Huazhe Xu.
ICML, 2024 (*Oral - top 2%*).
- When to Update Your Model: Constrained Model-based Reinforcement Learning.**
Tianying Ji, Yu Luo, Fuchun Sun, Mingxuan Jing, Fengxiang He, Wenbing Huang.
NeurIPS, 2022 (*Spotlight - top 5%*).
- Seizing Serendipity: Exploiting the Value of Past Success in Off-Policy Actor-Critic.**
Tianying Ji, Yu Luo, Fuchun Sun, Xianyuan Zhan, Jianwei Zhang, Huazhe Xu.
ICML, 2024.
- OMPO: A Unified Framework for RL under Policy and Dynamics Shifts.**
Yu Luo, Tianying Ji, Fuchun Sun, Jianwei Zhang, Huazhe Xu, Xianyuan Zhan.
ICML, 2024 (*Oral - top 2%*).
- DrM: Mastering Visual Reinforcement Learning through Dormant Ratio Minimization.**
Guowei Xu, Ruijie Zheng, Yongyuan Liang, Xiyao Wang, Zhecheng Yuan, Tianying Ji, Yu Luo, Xiaoyu Liu, Jiaxin Yuan, Pu Hua, Shuzhen Li, Yanjie Ze, Hal Daumé III, Furong Huang, Huazhe Xu.
ICLR, 2024 (*Spotlight - top 5%*).
- H2O+: An Improved Framework for Hybrid Offline-and-Online RL with Dynamics Gaps.**
Haoyi Niu*, Tianying Ji*, Bingqi Liu, Haocheng Zhao, Xiangyu Zhu, Jianying Zheng, Pengfei Huang, Guyue Zhou, Jianming Hu, Xianyuan Zhan.
ICRA, 2025.
- RoboGolf: Mastering Real-World Minigolf with a Reflective Multi-Modality Vision-Language Model.**
Hantao Zhou*, Tianying Ji*, Jianwei Zhang, Fuchun Sun, Huazhe Xu.
ICML (MFM-EAI Workshop), 2024.
- Offline-Boosted Actor-Critic: Adaptively Blending Optimal Historical Behaviors in Deep Off-Policy RL.**
Yu Luo, Tianying Ji, Fuchun Sun, Jianwei Zhang, Huazhe Xu, Xianyuan Zhan.
ICML, 2024.
- Goal-Conditioned Hierarchical Reinforcement Learning With High-Level Model Approximation.**
Yu Luo, Tianying Ji, Fuchun Sun, Huaping Liu, Jianwei Zhang, Mingxuan Jing, Wenbing Huang.
IEEE Transactions on Neural Networks and Learning Systems (TNNLS), 2024.

- [Scrutinize What We Ignore: Reining In Task Representation Shift Of Context-Based Offline Meta Reinforcement Learning.](#)
Hai Zhang, Boyuan Zheng, **Tianying Ji**, JinHang Liu, Anqi Guo, Junqiao Zhao, Lanqing Li.
ICLR, 2025.
- [BDAC: A Behavior-aware Dynamic Adaptive Configuration on DHCP in Wireless LANs.](#)
Congcong Miao, Jilong Wang, **Tianying Ji**, Hui Wang, Chao Xu, Fenghua Li, Fengyuan Ren.
International Conference on Network Protocols (ICNP), 2019.
- [Smooth Computation without Input Delay: Robust Tube-Based Model Predictive Control for Robot Manipulator Planning.](#)
Qie Sima*, Yu Luo*, **Tianying Ji**, Fuchun Sun, Huaping Liu, Jianwei Zhang.
IEEE International Conference on Robotics and Automation (ICRA), 2024.
- [Motion Planning Integrated with Vehicle-Terrain Interactions for Off-Road Autonomous Ground Vehicles.](#)
Jianhua Yin, Xianyuan Zhan, **Tianying Ji**, Bingrong Xu, Yi He, Daqing Zhang, Lingxi Li.
IEEE International Conference on Intelligent Transportation Systems (ITSC), 2024.
- [Robot Cognitive Learning by Considering Physical Properties.](#)
Fuchun Sun, Wenbing Huang, Yu Luo, **Tianying Ji**, Huaping Liu, He Liu, Jianwei Zhang.
Engineering, 2024.
- [Robust tube-based MPC with smooth computation for dexterous robot manipulation.](#)
Yu Luo, **Tianying Ji**, Fuchun Sun, Qie Sima, Huaping Liu, Mingxuan Jing, Jianwei Zhang.
Science China, Information Sciences, 2024.
- [Bidirectional-Reachable Hierarchical Reinforcement Learning with Mutually Responsive Policies.](#)
Yu Luo, Fuchun Sun, **Tianying Ji**, Xianyuan Zhan.
Reinforcement Learning Conference (RLC), 2024.
- [RGB-D Object Segmentation for Multi-Step Pick-and-Place in Open Cloud Robot Table.](#)
Chao Yang, Chengliang Zhong, Mingxuan Jing, Yu Luo, **Tianying Ji**, Wenbing Huang, Xiaodong Mu, Fuchun Sun.
IEEE International Conference on Robotics and Automation (ICRA) (Cloud-Based Competitions and Benchmarks for Robotic Manipulation and Grasping Workshop), 2021.
- [A Comprehensive Survey on Embodied Intelligence: Advancements, Challenges, and Future Perspectives.](#)
Fuchun Sun, Runfa Chen, **Tianying Ji**, Yu Luo, Huaidong Zhou, Huaping Liu.
CAAI Artificial Intelligence Research, 2024.

MONOGRAPH & INVITED TALKS

- [Embodied Artificial Intelligence: Theories and Applications](#) (具身智能: 理论与应用).
Fuchun Sun, **Tianying Ji**, Huaping Liu, Runfa Chen, Yu Luo.
Tsinghua University Press (清华大学出版社) (Forthcoming).
- **Invited talk:** Towards Artificial General Intelligence: Frontiers in Embodied Reinforcement Learning.
ICCCS (第三届认知计算与系统会议), 21 Dec. 2024.
- **Invited talk:** Research Development and Thinking on Embodied Intelligence.
Northwestern Polytechnical University (西北工业大学), 20 Sept. 2024.
- **Invited talk:** When to Update Your Model Constrained Model-based Reinforcement Learning.
The Heart of The Machine (机器之心), 27 Oct. 2022.

PATENTS

- Fuchun Sun, **Tianying Ji**, Yu Luo, Yan Zeng. A model training and policy optimization system based on an event-triggering mechanism (一种基于事件触发机制的模型训练与策略优化方法及系统). CN117763974A, 26 Mar. 2024.
- Fuchun Sun, Yu Luo, **Tianying Ji**, Yan Zeng. Agent hierarchical reinforcement learning method and system based on dynamic high-level planner (基于动态高层规划器的智能体层次化强化学习方法及系统). CN117872758A, 12 Apr. 2024.
- Xianyuan Zhan, **Tianying Ji**, Yu Luo. Method and device for realizing reinforcement learning of intelligent body by searching and utilizing balance (一种实现探索与利用平衡的智能体强化学习方法和装置). CN116663653A, 29 Aug. 2023.
- Xianyuan Zhan, Yu Luo, Xiangyu Zhu, Wenjia Zhang, **Tianying Ji**, Ce Zhang, Huiwen Zheng, Chenhui Liu, Hui Li, Shukun Yang, Tao Yang. Hierarchical reinforcement learning for intelligent cold source temperature control and energy optimization. (冷源温控和能量优化的智能体离线层次化强化学习方法). CN118642354A, 27 Feb. 2024.

INTERNSHIPS & OVERSEAS EXPERIENCES

- **HAOMO.AI Autonomous Driving Research Cooperation Project** Beijing, China
Research Project Internship; Institute for AI Industry Research, Tsinghua University Sept. 2022 - Nov. 2023
- **SFB/TRR169-Multimodal Learning Sino-German Cooperation Project** Hamburg, Germany
Visiting Scholar; University of Hamburg Nov. 2023 - Feb. 2024

HONORS & AWARDS

- OCRTOC: Open Cloud Robot Table Organization Challenge @ IROS 2020, Simulation Track: Team Champion, Real Robot Track: Team 3rd place, 2020.
- Tsinghua University, Tsinghua 1st-class scholarship for overall excellence (清华大学校设综合一等奖学金), 2023 & 2024.
- Tsinghua University, "Love Reading" Scholarship (清华大学“好读书”奖学金), 2017 & 2019.