

Heng Zhang

Genova, Italy | heng.zhang@iit.it | +39-3277123570 | [homepage](#) | [linkedin](#) | [github](#) | [google scholar](#)

About Me

I am a PhD student at [HRII Lab](#) at **Italian Institute of Technology (IIT)**, supervised by Dr. [Arash Ajoudani](#), I'm interested in robot learning, reinforcement learning. Specifically, My current research interest focuses on:

- Learning-based methods for robotic contact-rich tasks, focusing on safety issues, including safe exploration and safe execution;
- RL fine-tuning for VLA to achieve safe contact manipulation (multimodal VLA, including force-torque, vision, tactile sensing, and language processing).

Education

HRII Lab , IIT and University of Genova , PhD student in robotics and intelligent machine	Nov. 2022 – date
RAIL lab , Tongji University , Master in Control Engineering	Sep. 2019 – May. 2022
Northeast Electric Power University , Bachelor in Automation	Sep. 2012 – Jun. 2016

Work Experience

I&C Engineer, China National Nuclear Corporation, Taizhou	Jul. 2016 – Aug 2019
---	----------------------

Selected Publications

- [SRL-VIC: A Variable Stiffness-Based Safe Reinforcement Learning for Contact-Rich Robotic Tasks](#)
Heng Zhang, Gokhan Solak, Gustavo J. G. Lahr, Arash Ajoudani
IEEE Robotics and Automation Letters, vol. 9, no. 6, pp. 5631-5638, June 2024, doi: 10.1109/LRA.2024.3396368
transferred to The 33rd IEEE International Conference on Robot and Human Interactive Communication (IEEE RO-MAN 2024)
- [Survey on Imitation Learning for Contact-Rich Tasks in Robotics](#) [in submission to IJRR]
Toshiaki Tsuji, Arash Ajoudani, Gokhan Solak, **Heng Zhang**, Tadej Petrič, Yasuhiro Kato, and Francesco Nori
- [Towards Passive Safe Reinforcement Learning: A Comparative Study on Contact-rich Robotic Manipulation](#)
Heng Zhang, Gokhan Solak, Sebastian Schleisner Hjorth, Arash Ajoudani
under review, 2025, IEEE R-AL
- [SESE: Safe Exploration And Safe Execution: Safe Learning-based Methods for Robot Contact-rich Tasks](#)
Heng Zhang, Rui Dai, Gokhan Solak, Arash Ajoudani
in progress, 2025
- [Bresa: Bio-inspired Reflexive Safe Reinforcement Learning for Contact-Rich Robotic Tasks](#)
Heng Zhang, Gokhan Solak, Arash Ajoudani
under review, 2025, IEEE R-AL
- [Scaling Laws of Scientific Discovery with AI and Robot Scientists](#) [in submission to Nature Machine Intelligence]
Pengsong Zhang, Heng Zhang, Huazhe Xu, Renjun Xu, Zhenting Wang, Cong Wang, Animesh Garg, Zhibin Li, Arash Ajoudani, Xinyu Liu
- [Semantic Visual Simultaneous Localization and Mapping: A Survey](#)
Kaiqi Chen;Junhao Xiao; Jialing Liu; Qiyi Tong; **Heng Zhang**; Ruyi Liu; Jianhua Zhang; Arash Ajoudani; Shengyong Chen
IEEE Intelligent Transportation Systems Transactions, 2025

Additional Experience And Awards

Reviewer

I am serving as a reviewer in community, such as IEEE RAL, TCDS, IROS, RO-MAN, CAC.

Workshop Organization

IROS 2025: Embodied AI and Robotics for Future Scientific Discovery

Honors

- 1.2022 Excellent Graduate of class 2022 at Tongji University.
- 2.2022 Outstanding Graduate student in 2022 at Tongji University.
- 3.2021 Winner of Excellent Graduate Student at Tongji University.