

Yuhai Wang

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EDUCATION

Northeastern University

Ph.D. in Civil and Environmental Engineering;

Advisor: Gilbert Yang Ye

Boston, MA

Sep. 2025 – Present

University of Southern California

M.S. in Analytics;

Advisor: Daniel Seita

Los Angeles, CA

Jan. 2023 – Jan. 2025

Tiangong University

B.E. in Internet of Things;

Advisor: Xuan Xiao

Tianjin, China

Aug. 2018 – May. 2022

SELECTED PUBLICATIONS

1. **Wang, Yuhai**; Maryam Pishgar. Dynamic Token Selective Transformer for Aerial-Ground Person Re-Identification. *IEEE International Conference on Multimedia & Expo (ICME)*, under review, 2025. [📄 \[pdf\]](#), [🌐 \[project page\]](#).
2. Jiang, Hao; **Wang, Yuhai***; Zhou, Hanyang*; Seita, Daniel. Learning to Singulate Objects in Packed Environments Using a Dexterous Hand. *International Symposium of Robotics Research (ISRR)*, 2024. [📄 \[pdf\]](#), [🌐 \[project page\]](#).
3. Ye, Baijun; Liu, Caiyun; Ye, Xiaoyu; Chen, Yuantao; **Wang, Yuhai**; Yan, Zike; Shi, Yongliang; Zhao, Hao; Zhou, Guyue. Blending Distributed NeRFs with Tri-stage Robust Pose Optimization. *International Conference on Intelligent Robots and Systems (IROS)*, 2024. [📄 \[pdf\]](#)
4. Xue, Yongjiang; Yuan, Xichen; **Wang, Yuhai(speaker)**; Yang, Yang; Lu, Siyu; Zhang, Bo; Lai, Juezhu; Wang, Jianming; Xiao, Xuan. Lywal: A Leg-Wheel Transformable Quadruped Robot with Picking Up and Transport Functions. *International Conference on Robotics and Automation (ICRA)*, 2021. [📄 \[pdf\]](#) [🎥 \[Video page\]](#).

RESEARCH EXPERIENCE

Sensing, Learning, and Understanding for Robotic Manipulation (SLURM) Lab

Los Angeles, CA

Research Assistant, advised by Prof. Daniel Seita

Sep. 2023 – present

- Developed a framework for object separation in crowded environments using Isaac Gym for simulation, incorporating displacement-based state representation and multi-phase reinforcement learning. Conducted physical experiments with Allegro and Franka robots, using Realsense D435i and D405 for the vision system, based on the DROID Robot Platform.(ISRR 2024)
- Proposed a Top-k Token Selective Transformer for aerial-ground camera networks(AGPReID), to better model identity representation spatially(ICME 2025 Under Review)

Institute of AI Industry Research(AIR), Tsinghua University

Remote

Research Assistant, advised by Prof. Guyue Zhou & Prof. Yongliang Shi

April. 2023 – Sep. 2023

- Developed a distributed NeRF system with three-stage pose optimization, utilizing Mip-NeRF360 to obtain precise image poses and enhancing robustness through inverted Mip-NeRF360 and truncated dynamic low-pass filters.(IROS 2024)
- Achieved NeRF fusion by calculating coarse transformations between NeRFs in different coordinate systems, demonstrating strong performance in both real-world and simulated environments.

Institute of AI Industry Research(AIR), Tsinghua University

Beijing, China

*Research Engineer, advised by Prof. Guyue Zhou & Prof. Xinliang Zhang**Aug. 2021 – Feb. 2022*

- Exported the URDF models of the ARX5 robot arm from SolidWorks and completed its simulation and physical control using MoveIt and ROS. Utilized a RealSense D435i camera to acquire ArUco marker positions, integrating them into ROS to enable the ARX5's end effector to track the position of the ArUco marker.
- Participated in building the simulation environment for the IEEE ICRA2022 RoboMaster University Sim2Real Challenge.

Robotics Research Lab, Tiangong University

Tianjin, China

*Research Assistant, advised by Prof. Xuan Xiao**Oct. 2019 – Aug. 2021*

- Designed and developed a quadruped robot featuring a novel leg mechanism based on a four-bar linkage, and completed kinematic calculations using C language.
- Utilized Webots for robot simulation to achieve two motion postures, and employed MATLAB for controlling the physical robot, successfully conducting experimental tests.(ICRA 2021)

SERVICE**SLURM Lab, USC**

Los Angeles, CA

*Graduate Research Assistant**Sep. 2023 – now***WBCD Competition@ICRA 2025**

Atlanta, GA

*Hardware Sponsor**May. 2025***ISE 534: Data Analytics Consulting, USC**

Los Angeles, CA

*Graduate Teaching Assistant**Jan. 2024 – May. 2024***Agile Robotics workshop@ICRA 2024**

Remote

*Reviewer**April. 2024***School of Computer Science and Technology, Tiangong University**

Tianjin, China

*Academic Representative**Aug. 2018 – May. 2022*

HONORS & AWARDS**President's Scholarship***2019, 2020***Social Activities Scholarship***2020***Outstanding Student Leader Award***2019, 2021***Off-campus competition scholarship***2020***First Prize in the National Challenge Cup Competition***2021***Honorable Mention of the Mathematical Contest in Modeling***2020*

SKILLS**Programming Languages:** Python, C, Matlab, R, SPSS, SQL**Robotics:** ROS, Motion Planning, Mobile Manipulation**Robot Learning:** RL (DDPG, PPO), IL (BC), Inverse RL, Hierarchical Learning**Robot Hardware:** Franka, Allegro Hand, ARX5 Arm, Go2 Dog, Leap Hand, Lywal(undergraduate project)**Computer Vision:** Re-identification, Diffusion Models, GANs**Libraries:** PyTorch, OpenCV, Isaac Gym, Mujoco