Dian Wang

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EDUCATION

Northeastern University, Boston, MA — Jan. 2020-Present
Ph.D in Computer Science

Northeastern University, Boston, MA — GPA: 4.0/4.0 — Sept. 2017-Dec. 2019
M.S in Computer Science

Sichuan University, Chengdu, China — GPA: 3.56/4.0 — Sept. 2013-June 2017
B.Eng in Computer Science & Engineering

EXPERIENCE

The Helping Hands Lab, Northeastern University, Boston, MA — Jan. 2018-Present
Research Assistant

Equivariant reinforcement learning in robotic manipulation

- Defined the symmetric properties of reinforcement learning in robotic manipulation.
- Proposed neural network architectures for improving training efficiency in robotic manipulation tasks.

BulletArm reinforcement learning environments

- Implemented an open-sourced robotic reinforcement learning environment library using PyBullet.
- Built a real-world experimental platform using a UR5 arm.

Policy learning in SE(3) action spaces

- Designed a reinforcement learning framework for robotic manipulation tasks.
- Proposed an imitation learning algorithm for large action spaces.

Assistive robotic pick-and-place system

- Built an assistive robotic system to assist people with disabilities in household manipulation tasks.
- Conducted pick-and-place experiments in an open world environment.

Institute of Computing Technology, Chinese Academy of Sciences, Beijing, China — July 2016-Aug. 2016
Research Intern

- Led team of 4 interns to implement a user dynamic detection app based on data from gravity sensor.

PUBLICATIONS

[14] **Dian Wang**, Jung Yeon Park, Neel Sortur, Lawson L.S. Wong, Robin Walters, Robert Platt. "The Surprising Effectiveness of Equivariant Models in Domains with Latent Symmetry". *Under review*. Link.

[13] Mingxi Jia*, **Dian Wang***, Guanang Su, David Klee, Xupeng Zhu, Robin Walters, Robert Platt. "SEIL: Simulation-augmented Equivariant Imitation Learning". *Under review*. *Equal contribution. Link.

[12] Haojie Huang, **Dian Wang**, Xupeng Zhu, Robin Walters, Robert Platt. "Edge Grasp Network: A Graph-Based SE(3)-invariant Approach to Grasp Detection". *Under review*. Link.

[11] **Dian Wang**, Mingxi Jia, Xupeng Zhu, Robin Walters, Robert Platt. "On-Robot Learning With Equivariant Models". *Conference on Robot Learning (CoRL)*, 2022. Acceptance Rate: 39%. Link.

[10] Hai Huu Nguyen, Andrea Baisero, **Dian Wang**, Christopher Amato, Robert Platt. "Leveraging Fully Observable Policies for Learning under Partial Observability". *Conference on Robot Learning (CoRL)*, 2022. Acceptance Rate: 39%. Link.

[9] **Dian Wang***, Colin Kohler*, Xupeng Zhu, Mingxi Jia, Robert Platt. "BulletArm: An Open-Source Robotic Manipulation Benchmark and Learning Framework". *The International Symposium on Robotics Research (ISRR)*, 2022. *Equal contribution. Acceptance Rate 49%. Link.

[8] Haojie Huang, **Dian Wang**, Robin Walters, Robert Platt. "Equivariant Transporter Network". *Robotics: Science and Systems (RSS)*, 2022. Acceptance Rate 32%. Link.

[7] Xupeng Zhu, **Dian Wang**, Ondrej Biza, Guanang Su, Robin Walters, Robert Platt. "Sample Efficient Grasp Learning Using Equivariant Models". *Robotics: Science and Systems (RSS)*, 2022. Acceptance Rate 32%. Link.

[6] **Dian Wang**, Robin Walters, Robert Platt. "SO(2)-Equivariant Reinforcement Learning". *International Conference on Learning Representations (ICLR)*, 2022. **Spotlight**. Spotlight Rate 5%. Link.

[5] **Dian Wang**, Robin Walters, Xupeng Zhu, Robert Platt. "Equivariant Q Learning in Spatial Action Spaces". *Conference on Robot Learning (CoRL)*, 2021. Acceptance Rate: 34%. Link.

[4] Alexander Wilkinson, Michael Gonzales, Patrick Hoey, David Kontak, **Dian Wang**, Noah Torname, Sam Laderoute, Zhao Han, Jordan Allspaw, Robert Platt, Holly Yanco. "Design Guidelines for Human-Robot Interaction with Assistive Robot Manipulation Systems". *Paladyn, Journal of Behavioral Robotics*, 2021. Link.

[3] Ondrej Biza, **Dian Wang**, Robert Platt, Jan-Willem van de Meent, Lawson LS Wong. "Action Priors for Large Action Spaces in Robotics". *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2021. Acceptance Rate: 25%. Link.

[2] **Dian Wang**, Colin Kohler, Robert Platt. "Policy learning in SE(3) action spaces". *Conference on Robot Learning (CoRL)*, 2020. Acceptance Rate: 34.7%. Link.

[1] **Dian Wang**, Colin Kohler, Andreas ten Pas, Alexander Wilkinson, Maozhi Liu, Holly Yanco, Robert Platt. "Towards Assistive Robotic Pick and Place in Open World Environments". *The International Symposium on Robotics Research (ISRR)*, 2019. Link.

PRESENTATIONS

Equivariant Q Learning in Spatial Action Spaces Robotics: Science and Systems (RSS) 2022 Second Workshop on Scaling Robot Learning	New York City, NY	June 2022
SO(2)-Equivariant Reinforcement Learning for Robotic Manipulation International Conference on Robotics and Automation (ICRA) 2022 Workshop on Scaling Robot Learning	Philadelphia, PA	May 2022
SO(2)-Equivariant Reinforcement Learning International Conference on Learning Representations (ICLR), 2022	Online	Apr. 2022
Equivariant Q Learning in Spatial Action Spaces Conference on Robot Learning (CoRL), 2021	Online	Nov. 2021
Policy Learning in SE(3) Action Spaces Conference on Robot Learning (CoRL), 2020	Online	Nov. 2020
Imitation Learning with Pixel-Wise Robotic End Effector Action Parametrization M.S. Thesis Defense, Khoury College of Computer Sciences, Northeastern University	Boston, MA	Dec. 2019
Towards Assistive Robotic Pick and Place in Open World Environments The International Symposium on Robotics Research (ISRR), 2019	Hanoi, Vietnam	Oct. 2019

PROFESSIONAL SERVICE

Reviewer: ICRA2023, CoRL 2022, RAL 2022, T-RO 2022, ICRA 2022, IROS 2021, ICRA 2019

HONERS AND AWARDS

Best Paper Award Finalist	ICRA 2022 Workshop on Scaling Robot Learning	May 2022
Khoury College Graduate Research Fellowship	Northeastern University	Aug. 2019
First Place of Outstanding Bachelor's Thesis	Sichuan University	June 2017

TECHNICAL KNOWLEDGE

Programming Languages:	Python, Java, C++
Tools:	PyCharm, IntelliJ IDEA, Git, LaTeX, Final Cut Pro
Robotics:	UR5, Baxter, Robotic Operating System (ROS), PyBullet, OpenRave
Machine Learning:	PyTorch, NumPy