

Dian Wang

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RESEARCH INTERESTS

Robot Learning, Geometric Deep Learning, Robotic Manipulation and Grasping, Reinforcement Learning

EDUCATION

Northeastern University

Boston, MA, USA

Ph.D. in Computer Science. Advisors: Prof. Robert Platt, Prof. Robin Walters

Jan. 2020 – Present

M.S. in Computer Science; GPA: 4.00/4.00

Sept. 2017 – Dec. 2019

Sichuan University

Chengdu, China

B.Eng. in Computer Science and Engineering; GPA: 3.56/4.00

Sept. 2013 – June 2017

EXPERIENCE

Boston Dynamics AI Institute

Cambridge, MA, USA

Research Intern

May 2023 – Aug. 2023; May 2024 – Aug. 2024

PUBLICATIONS

CONFERENCE PAPERS

- C19 **D. Wang**, S. Hart, D. Surovik, T. Kelestemur, H. Huang, H. Zhao, M. Yeatman, J. Wang, R. Walters, and R. Platt. Equivariant diffusion policy. In *Conference on Robot Learning (CoRL)*, 2024. **Best Paper Award Finalist**. [Link](#)
- C18 B. Hu, X. Zhu*, **D. Wang***, Z. Dong*, H. Huang*, C. Wang*, R. Walters, and R. Platt. Orbitgrasp: Se(3)-equivariant grasp learning. In *Conference on Robot Learning (CoRL)*, 2024. [Link](#)
- C17 H. Huang, K. Schmeckpeper*, **D. Wang***, O. Biza, Y. Qian, H. Liu, M. Jia, R. Platt, and R. Walters. Imagination policy: Using generative point cloud models for learning manipulation policies. In *Conference on Robot Learning (CoRL)*, 2024. [Link](#)
- C16 H. Huang, O. L. Howell*, **D. Wang***, X. Zhu*, R. Platt[†], and R. Walters[†]. Fourier transporter: Bi-equivariant robotic manipulation in 3d. In *International Conference on Learning Representations (ICLR)*, 2024. [Link](#)
- C15 **D. Wang**, X. Zhu, J. Y. Park, R. Platt, and R. Walters. A general theory of correct, incorrect, and extrinsic equivariance. In *Conference on Neural Information Processing Systems (NeurIPS)*, 2023. [Link](#)
- C14 H. H. Nguyen, D. Klee, A. Baisero, **D. Wang**, R. Platt, and C. Amato. Equivariant reinforcement learning under partial observability. In *Conference on Robot Learning (CoRL)*, 2023. [Link](#)
- C13 **D. Wang**, J. Y. Park, N. Sortur, L. L. Wong, R. Walters[†], and R. Platt[†]. The surprising effectiveness of equivariant models in domains with latent symmetry. In *International Conference on Learning Representations (ICLR)*, 2023. **Spotlight**. [Link](#)
- C12 M. Jia*, **D. Wang***, G. Su, D. Klee, X. Zhu, R. Walters, and R. Platt. Seil: Simulation-augmented equivariant imitation learning. In *International Conference on Robotics and Automation (ICRA)*, 2023. [Link](#)
- C11 H. Huang, **D. Wang**, X. Zhu, R. Walters, and R. Platt. Edge grasp network: A graph-based SE(3)-invariant approach to grasp detection. In *International Conference on Robotics and Automation (ICRA)*, 2023. [Link](#)
- C10 **D. Wang**, M. Jia, X. Zhu, R. Walters, and R. Platt. On-robot learning with equivariant models. In *Conference on Robot Learning (CoRL)*, 2022. [Link](#)
- C9 H. H. Nguyen, A. Baisero, **D. Wang**, C. Amato, and R. Platt. Leveraging fully observable policies for learning under partial observability. In *Conference on Robot Learning (CoRL)*, 2022. [Link](#)
- C8 **D. Wang***, C. Kohler*, X. Zhu, M. Jia, and R. Platt. Bulletarm: An open-source robotic manipulation benchmark and learning framework. In *The International Symposium on Robotics Research (ISRR)*, 2022. [Link](#)
- C7 H. Huang, **D. Wang**, R. Walters, and R. Platt. Equivariant transporter network. In *Robotics: Science and Systems (RSS)*, 2022. [Link](#)
- C6 X. Zhu, **D. Wang**, O. Biza, G. Su, R. Walters, and R. Platt. Sample efficient grasp learning using equivariant models. In *Robotics: Science and Systems (RSS)*, 2022. [Link](#)

- C5 **D. Wang**, R. Walters, and R. Platt. SO(2)-equivariant reinforcement learning. In *International Conference on Learning Representations (ICLR)*, 2022. **Spotlight**. [Link](#)
- C4 **D. Wang**, R. Walters, X. Zhu, and R. Platt. Equivariant Q learning in spatial action spaces. In *Conference on Robot Learning (CoRL)*, 2021. [Link](#)
- C3 O. Biza, **D. Wang**, R. Platt, J.-W. van de Meent, and L. L. Wong. Action priors for large action spaces in robotics. In *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2021. [Link](#)
- C2 **D. Wang**, C. Kohler, and R. Platt. Policy learning in SE(3) action spaces. In *Conference on Robot Learning (CoRL)*, 2020. [Link](#)
- C1 **D. Wang**, C. Kohler, A. ten Pas, A. Wilkinson, M. Liu, H. Yanco, and R. Platt. Towards assistive robotic pick and place in open world environments. In *The International Symposium on Robotics Research (ISRR)*, 2019. [Link](#)

JOURNAL PAPERS

- J3 H. Huang, **D. Wang**, A. Tangri, R. Walters, and R. Platt. Leveraging pick and place symmetries. *The International Journal of Robotics Research (IJRR)*, 2024. [Link](#)
- J2 X. Zhu, **D. Wang**, G. Su, O. Biza, R. Walters, and R. Platt. On robot grasp learning using equivariant models. *Autonomous Robots*, 2023. [Link](#)
- J1 A. Wilkinson, M. Gonzales, P. Hoey, D. Kontak, **D. Wang**, N. Tornare, A. Sinclair, Z. Han, J. Allspaw, R. Platt, and H. Yanco. Design guidelines for human-robot interaction with assistive robot manipulation systems. *Paladyn, Journal of Behavioral Robotics*, 2021. [Link](#)

PREPRINTS

- P3 H. Huang, H. Liu, **D. Wang**, R. Walters[†], and R. Platt[†]. Match policy: A simple pipeline from point cloud registration to manipulation policies. Under review. [Link](#)
- P2 A. Tangri, O. Biza, **D. Wang**, D. Klee, O. L. Howell, and R. Platt. Equivariant offline reinforcement learning. Under review. [Link](#)
- P1 M. Jia, H. Huang, C. W. Zhewen Zhang, L. Zhao, **D. Wang**, J. X. Liu, R. Walters, R. Platt, and S. Tellex. Open-vocabulary pick and place via patch-level semantic maps. Under review. [Link](#)

HONORS AND AWARDS

Best Paper Award Finalist	Conference on Robot Learning (CoRL) 2024	Nov. 2024
2023 JPMorgan Chase Ph.D. Fellowship	JPMorgan Chase	June 2023
Best Paper Award Finalist	ICRA 2022 Scaling Robot Learning Workshop	May 2022
Khoury College Graduate Research Fellowship	Northeastern University	Aug. 2019

TEACHING

Teaching Assistant

Reinforcement Learning and Sequential Decision Making (Northeastern CS5180), Prof. Christopher Amato Fall 2024

Guest Lecture on Equivariant Policy Learning for Robotic Manipulation

Algorithmic Robotics (Rice University Comp550), Prof. Lydia Kavraki Nov. 2024

Guest Lecture on Equivariant Reinforcement Learning for Robotic Manipulation

Reinforcement Learning and Sequential Decision Making (Northeastern CS5180), Prof. Lawson Wong Apr. 2024

Guest Lecture on Equivariant Learning for Robotic Manipulation

Geometric Deep Learning (Northeastern CS7180), Prof. Robin Walters Apr. 2023

Guest Lecture on Leveraging SE(2) Symmetries in Robot Learning

Robotics Science and Systems (Northeastern CS5335), Prof. Robert Platt Mar. 2022

MENTORING

Haibo Zhao	M.S. at Northeastern		Nov. 2023 - Present
Mingxi Jia	M.S. at Northeastern	Now Ph.D. Student at Brown	Dec. 2021 - May 2023
Guanang Su	M.S. at Northeastern	Now Ph.D. Student at Univ. of Minnesota	Dec. 2021 - May 2023
Neel Sortur	Undergrad. at Northeastern	Now M.S. Student at Northeastern	May 2021 - Oct. 2022
Zhengyi Ou	M.S. at Northeastern	Now Software Engineer at Medtronic	Sept. 2020 - Dec. 2021
Yida Niu	M.S. at Northeastern	Now Ph.D. Student at Peking University	Sept. 2020 - Aug. 2021

PROFESSIONAL SERVICE

Lead Organizer, RSS 2023 Workshop on Symmetries in Robot Learning

Organizer, RSS 2024 Workshop on Geometric and Algebraic Structure in Robot Learning

Reviewer: IJRR2024. ICML 2024. ICLR 2023-2025. NeurIPS 2023. ICRA 2019, 2022-2024. CoRL 2022-2024. IROS 2021, 2023. RAL 2022-2024. T-RO 2022.

MEDIA COVERAGE

Khoury Story: Dian on Researching Machine Learning and Robotics, [Link](#)

June 2024

Institute for Experiential Robotics Newsletter, Dian Wang - CoRL 2022 Presentation

Jan. 2023

Northeastern Global News, photo by Matthew MODOONO, [Link](#)

Sept. 2020

IEEE Spectrum Video Friday, [Link](#)

Sept. 2019

OUTREACH

AI in Action - Everyday Robotics, presentation and demo at Northeastern University

Apr. 2024

TALKS AND ORAL PRESENTATIONS

Equivariant Policy Learning for Robotic Manipulation

UT Austin

Nov. 2024

Texas A&M University

Nov. 2024

TU Munich

Nov. 2024

Next-Gen Robot Learning Symposium at TU Darmstadt

Nov. 2024

Stanford University

Oct. 2024

University of California, San Diego

Oct. 2024

Boston University

Oct. 2024

GRASP SFI Seminar, University of Pennsylvania

Sept. 2024

University of Washington

Sept. 2024

Carnegie Mellon University

June 2024

Brown University

June 2024; Apr. 2023

Boston Robotics Speaker Series, presented by Universal Robots

Mar. 2023

Equivariant Diffusion Policy

Munich, Germany

Conference on Robot Learning (CoRL) 2024

Nov. 2024

Pushing the Limits of Equivariant Neural Networks (with Robin Walters)

Cambridge, MA, USA

NeurReps Global Speaker Series at MIT

Oct. 2024

Equivariant Models for Long-Horizon Manipulation

Cambridge, MA, USA

Boston Dynamics AI Institute

Mar. 2024

The Surprising Effectiveness of Equivariant Models in Domains with Latent Symmetry Kigali, Rwanda

International Conference on Learning Representations (ICLR) 2023

May 2023

Equivariant Q Learning in Spatial Action Spaces

New York City, NY, USA

RSS 2022 Workshop on Scaling Robot Learning

June 2022

SO(2)-Equivariant Reinforcement Learning for Robotic Manipulation

Philadelphia, PA, USA

ICRA 2022 Workshop on Scaling Robot Learning

May 2022

Towards Assistive Robotic Pick and Place in Open World Environments

Hanoi, Vietnam

The International Symposium on Robotics Research (ISRR) 2019

Dec. 2019