

# Dian Wang

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## RESEARCH INTERESTS

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

## EMPLOYMENT

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<b>Stanford University</b> <i>Postdoctoral Researcher. Advisors: Prof. Shuran Song, Prof. Jeannette Bohg</i>	Stanford, CA, USA July 2025 – Present
<b>Boston Dynamics AI Institute</b> <i>Research Intern</i>	Cambridge, MA, USA May 2023 – Aug. 2023; May 2024 – Aug. 2024

## EDUCATION

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<b>Northeastern University</b> <i>Ph.D. in Computer Science. Advisors: Prof. Robert Platt, Prof. Robin Walters</i> <i>M.S. in Computer Science; GPA: 4.00/4.00</i>	Boston, MA, USA Jan. 2020 – June 2025 Sept. 2017 – Dec. 2019
<b>Sichuan University</b> <i>B.Eng. in Computer Science and Engineering; GPA: 3.56/4.00</i>	Chengdu, China Sept. 2013 – June 2017

## PUBLICATIONS

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### CONFERENCE PAPERS

- C21 H. Zhao\*, **D. Wang\***<sup>✉</sup>, Y. Zhu, X. Zhu, O. Howell, L. Zhao, Y. Qian, R. Walters, and R. Platt. Hierarchical equivariant policy via frame transfer. In *International Conference on Machine Learning (ICML)*, 2025. [Link](#)
- C20 H. Huang, H. Liu, **D. Wang**, R. Walters<sup>†</sup>, and R. Platt<sup>†</sup>. Match policy: A simple pipeline from point cloud registration to manipulation policies. In *International Conference on Robotics and Automation (ICRA)*, 2025. [Link](#)
- 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. **Outstanding 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<sup>†</sup>, and R. Walters<sup>†</sup>. 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<sup>†</sup>, and R. Platt<sup>†</sup>. 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

- J4 M. Jia, H. Huang, Z. Zhang, C. Wang, L. Zhao, **D. Wang**, J. X. Liu, R. Walters, R. Platt, and S. Tellex. Learning efficient and robust language-conditioned manipulation using textual-visual relevancy and equivariant language mapping. *IEEE Robotics and Automation Letters (RAL)*, 2025. [Link](#)
- 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](#)

#### WORKSHOP PAPERS

- W9 **D. Wang**, J. Y. Park, X. Zhu, N. Sortur, M. Jia, G. Su, L. Wong, R. Walters, and R. Platt. Correct, incorrect and extrinsic equivariance. In *ICML 2024 Workshop on Geometric-Grounded Representation Learning and Generative Modelling*, 2024
- W8 M. Jia, H. Huang, Z. Zhang, C. Wang, L. Zhao, **D. Wang**, J. X. Liu, R. Walters, R. Platt, and S. Tellex. Equivariant open-vocabulary pick and place via language kernels and patch-level semantic maps. In *RSS 2024 Workshop on Task Specification for General-Purpose Intelligent Robots*, 2024
- W7 **D. Wang**, J. Y. Park, N. Sortur, L. Wong, R. Walters, and R. Platt. The surprising effectiveness of equivariant models in domains with latent symmetry. In *NeurIPS 2023 Workshop on Symmetry and Geometry in Neural Representations*, 2023
- W6 **D. Wang\***, M. Jia\*, G. Su, D. Klee, X. Zhu, R. Walters, and R. Platt. Seil: Simulation-augmented equivariant imitation learning. In *CoRL 2022 Workshop on Sim-to-Real Robot Learning: Locomotion and Beyond*, 2022
- W5 H. Huang, **D. Wang**, X. Zhu, R. Walters, and R. Platt. Edge grasp network. In *CoRL 2022 Workshop on Sim-to-Real Robot Learning: Locomotion and Beyond*, 2022
- W4 **D. Wang**, X. Zhu, R. Walters, O. Biza, G. Su, and R. Platt. Equivariant  $Q$  learning in spatial action spaces. In *RSS 2022 Workshop on Scaling Robot Learning*, 2022
- W3 **D. Wang**, R. Walters, M. Jia, X. Zhu, and R. Platt. Equivariant reinforcement learning for robotic manipulation. In *ICRA 2022 Workshop on Scaling Robot Learning*, 2022
- W2 X. Zhu, **D. Wang**, O. Biza, G. Su, R. Walters, and R. Platt. Sample efficient grasp learning using equivariant models. In *ICRA 2022 Workshop on Scaling Robot Learning*, 2022
- W1 H. Huang, **D. Wang**, R. Walters, and R. Platt. Equivariant transporter network. In *ICRA 2022 Workshop on Scaling Robot Learning*, 2022. **Best Paper Award Finalist**

## PREPRINTS

- P5 **D. Wang**, B. Hu, S. Song, R. Walters, and R. Platt. A practical guide for incorporating symmetry in diffusion policy. [Link](#)
- P4 B. Hu, **D. Wang**, D. Klee, H. Tian, X. Zhu, H. Huang, R. Platt, and R. Walters. 3d equivariant visuomotor policy learning via spherical projection. [Link](#)
- P3 B. Hu\*, H. Tian\*, **D. Wang**, H. Huang, X. Zhu, R. Walters, and R. Platt. Push-grasp policy learning using equivariant models and grasp score optimization. [Link](#)
- P2 X. Zhu, D. Klee\*, **D. Wang\***, B. Hu, H. Huang, A. Tangri, R. Walters, and R. Platt. Coarse-to-fine 3d keyframe transporter. [Link](#)
- P1 A. Tangri, O. Biza, **D. Wang**, D. Klee, O. L. Howell, and R. Platt. Equivariant offline reinforcement learning. [Link](#)

## HONORS AND AWARDS

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<b>Outstanding PhD Student Award in Research</b>	Northeastern University	<i>Apr. 2025</i>
<b>Outstanding Paper Award Finalist</b>	Conference on Robot Learning (CoRL) 2024	<i>Nov. 2024</i>
<b>2023 JPMorgan Chase Ph.D. Fellowship</b>	JPMorgan Chase	<i>June 2023</i>
<b>Best Paper Award Finalist</b>	ICRA 2022 Scaling Robot Learning Workshop	<i>May 2022</i>
<b>Khoury College Graduate Research Fellowship</b>	Northeastern University	<i>Aug. 2019</i>

## TEACHING

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<b>Teaching Assistant</b>		
<i>Reinforcement Learning and Sequential Decision Making (Northeastern CS5180), Prof. Chris Amato</i>		<i>Fall 2024</i>
<b>Guest Lecture on Equivariant Policy Learning for Robotic Manipulation</b>		
<i>Algorithmic Robotics (Rice University Comp550), Prof. Lydia Kavraki</i>		<i>Nov. 2024</i>
<b>Guest Lecture on Equivariant Reinforcement Learning for Robotic Manipulation</b>		
<i>Reinforcement Learning and Sequential Decision Making (Northeastern CS5180), Prof. Lawson Wong</i>		<i>Apr. 2024</i>
<b>Guest Lecture on Equivariant Learning for Robotic Manipulation</b>		
<i>Geometric Deep Learning (Northeastern CS7180), Prof. Robin Walters</i>		<i>Apr. 2023</i>
<b>Guest Lecture on Leveraging SE(2) Symmetries in Robot Learning</b>		
<i>Robotics Science and Systems (Northeastern CS5335), Prof. Robert Platt</i>		<i>Mar. 2022</i>

## MENTORING

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Rachel Lim	M.S. at Northeastern		<i>Oct. 2024 - Present</i>
Yizhe Zhu	M.S. at Northeastern		<i>Oct. 2024 - Present</i>
Haibo Zhao	M.S. at Northeastern		<i>Nov. 2023 - Present</i>
Mingxi Jia	M.S. at Northeastern	Now Ph.D. Student at Brown	<i>Dec. 2021 - May 2023</i>
Guanang Su	M.S. at Northeastern	Now Ph.D. Student at Univ. of Minnesota	<i>Dec. 2021 - May 2023</i>
Neel Sortur	Undergrad. at Northeastern	Now M.S. Student at Northeastern	<i>May 2021 - Oct. 2022</i>
Zhengyi Ou	M.S. at Northeastern	Now Software Engineer at Medtronic	<i>Sept. 2020 - Dec. 2021</i>
Yida Niu	M.S. at Northeastern	Now Ph.D. Student at Peking University	<i>Sept. 2020 - Aug. 2021</i>

## PROFESSIONAL SERVICE

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**Lead Organizer**, RSS 2023 Workshop on Symmetries in Robot Learning

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

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

## MEDIA COVERAGE

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Khoury Story: Dian on Researching Machine Learning and Robotics, <a href="#">Link</a>	<i>June 2024</i>
Institute for Experiential Robotics Newsletter, Dian Wang - CoRL 2022 Presentation	<i>Jan. 2023</i>
Northeastern Global News, photo by Matthew MODOONO, <a href="#">Link</a>	<i>Sept. 2020</i>
IEEE Spectrum Video Friday, <a href="#">Link</a>	<i>Sept. 2019</i>

## OUTREACH

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AI in Action - Everyday Robotics, presentation and demo at Northeastern University Apr. 2024

## TALKS AND ORAL PRESENTATIONS

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### **Equivariant Policy Learning for Robotic Manipulation**

McGill University Nov. 2024

WPI Nov. 2024

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