

# Dian Wang

🌐 dianwang.io | 🐦 @Dian\_Wang\_ | 🎓 Google Scholar  
📺 Youtube | 🐙 GitHub | 📧 wang.dian@northeastern.edu

## RESEARCH INTERESTS

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

## EDUCATION

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### Northeastern University

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

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

Boston, MA, USA

*Jan. 2020 – Present*

*Sept. 2017 – Dec. 2019*

### Sichuan University

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

Chengdu, China

*Sept. 2013 – June 2017*

## EXPERIENCE

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### Boston Dynamics AI Institute

*Research Intern*

Cambridge, MA, USA

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

## PUBLICATIONS

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### CONFERENCE PAPERS

- 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. **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<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

- 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. Torname, 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

- P3 X. Zhu, D. Klee\*, **D. Wang\***, B. Hu, H. Huang, A. Tangri, R. Walters, and R. Platt. Coarse-to-fine 3d keyframe transporter. Under review. [Link](#)
- P2 A. Tangri, O. Biza, **D. Wang**, D. Klee, O. L. Howell, and R. Platt. Equivariant offline reinforcement learning. [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. [Link](#)

## HONORS AND AWARDS

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|  |   |                  |
|--|---|------------------|
| <b>Best 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, 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

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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 | <i>Apr. 2024</i> |
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## TALKS AND ORAL PRESENTATIONS

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|   |                  |
|---|------------------|
| <b>Equivariant Policy Learning for Robotic Manipulation</b> |                  |
| <i>McGill University</i>                                    | <i>Nov. 2024</i> |
| <i>WPI</i>  | <i>Nov. 2024</i> |
| <i>UT Austin</i>  | <i>Nov. 2024</i> |
| <i>Texas A&amp;M University</i>                             | <i>Nov. 2024</i> |
| <i>TU Munich</i>  | <i>Nov. 2024</i> |
| <i>Next-Gen Robot Learning Symposium at TU Darmstadt</i>    | <i>Nov. 2024</i> |
| <i>Stanford University</i>                                  | <i>Oct. 2024</i> |

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|---|-----------------------------|
| <i>University of California, San Diego</i>  | <i>Oct. 2024</i>            |
| <i>Boston University</i>  | <i>Oct. 2024</i>            |
| <i>GRASP SFI Seminar, University of Pennsylvania</i>                                      | <i>Sept. 2024</i>           |
| <i>University of Washington</i>   | <i>Sept. 2024</i>           |
| <i>Carnegie Mellon University</i>   | <i>June 2024</i>            |
| <i>Brown University</i>   | <i>June 2024; Apr. 2023</i> |
| <i>Boston Robotics Speaker Series, presented by Universal Robots</i>                      | <i>Mar. 2023</i>            |
| <b>Equivariant Diffusion Policy</b>   | Munich, Germany             |
| <i>Conference on Robot Learning (CoRL) 2024</i>   | <i>Nov. 2024</i>            |
| <b>Pushing the Limits of Equivariant Neural Networks (with Robin Walters)</b>             | Cambridge, MA, USA          |
| <i>NeurReps Global Speaker Series at MIT</i>  | <i>Oct. 2024</i>            |
| <b>Equivariant Models for Long-Horizon Manipulation</b>                                   | Cambridge, MA, USA          |
| <i>Boston Dynamics AI Institute</i>   | <i>Mar. 2024</i>            |
| <b>The Surprising Effectiveness of Equivariant Models in Domains with Latent Symmetry</b> | Kigali, Rwanda              |
| <i>International Conference on Learning Representations (ICLR) 2023</i>                   | <i>May 2023</i>             |
| <b>Equivariant Q Learning in Spatial Action Spaces</b>                                    | New York City, NY, USA      |
| <i>RSS 2022 Workshop on Scaling Robot Learning</i>  | <i>June 2022</i>            |
| <b>SO(2)-Equivariant Reinforcement Learning for Robotic Manipulation</b>                  | Philadelphia, PA, USA       |
| <i>ICRA 2022 Workshop on Scaling Robot Learning</i>                                       | <i>May 2022</i>             |
| <b>Towards Assistive Robotic Pick and Place in Open World Environments</b>                | Hanoi, Vietnam              |
| <i>The International Symposium on Robotics Research (ISRR) 2019</i>                       | <i>Dec. 2019</i>            |