

Raunaq Bhirangi

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Affiliation

2024 – **Postdoctoral Associate**
New York University (*Mentor: Lerrel Pinto*)

Education

2020 – 2024 **Carnegie Mellon University**
PhD in Robotics (*Advisors: Abhinav Gupta and Carmel Majidi*)
Thesis: [Tactile sensing for Robot Learning: Development to Deployment](#)

2018 – 2020 **Carnegie Mellon University**
MS in Robotics (*Advisors: Howie Choset and Matthew Travers*)
Thesis: [Learning Families of Behaviors for Legged Locomotion using Model-Free Deep Reinforcement Learning](#)
GPA: 4.06 / 4.00

2014 – 2018 **Indian Institute of Technology Bombay**
BTech in Mechanical Engineering, minor in Computer Science
GPA: 9.40 / 10.00

Research Experience

2022 – 2024 **Meta AI Research**
Visiting Researcher (*Mentors: Tess Hellebrekers and Vikash Kumar*)

2020 – 2024 **Carnegie Mellon University**
Graduate Research Assistant (*Mentors: Abhinav Gupta and Carmel Majidi*)

2018 – 2020 **Carnegie Mellon University**
Graduate Research Assistant (*Mentors: Howie Choset and Matthew Travers*)

2017 **Ohio State University**
Summer Research Intern (*Mentor: Rajendra Singh*)

2016 **Purdue University**
Summer Research Intern (*Mentor: David Cappelleri*)

Technical skills

Programming languages: Python, C/C++

Software and Frameworks: PyTorch, JAX, ROS, Mujoco, PyBullet, MATLAB, CAD, Git

Publications

Pre-prints

- 2024 **Learning Precise, Contact-Rich Manipulation through Uncalibrated Tactile Skins**
Venkatesh Pattabiraman*, Yifeng Cao, Siddhant Haldar, Lerrel Pinto, [Raunaq Bhirangi](#)*.
arXiv preprint arXiv:2410.17246 (Submitted to ICRA 2025).
- 2024 **Anyskin: Plug-and-play skin sensing for robotic touch**
[Raunaq Bhirangi](#), Venkatesh Pattabiraman, Enes Erciyes, Yifeng Cao, Tess Hellebrekers, Lerrel Pinto.
arXiv preprint arXiv:2409.08276 (Submitted to ICRA 2025).
- 2024 **Bridging the Human to Robot Dexterity Gap through Object-Oriented Rewards**
Irmak Guzey, Yinlong Dai, Georgy Savva, [Raunaq Bhirangi](#), Lerrel Pinto.
arXiv preprint arXiv:2410.23289 (Submitted to ICRA 2025).

Refereed Conference and Journal Publications

- 2024 **Hierarchical state space models for continuous sequence-to-sequence modeling**
[Raunaq Bhirangi](#), Chenyu Wang, Venkatesh Pattabiraman, Carmel Majidi, Abhinav Gupta, Tess Hellebrekers, Lerrel Pinto.
Forty-first International Conference on Machine Learning, ICML 2024.
Best Paper at Next Generation Sequence Models Workshop
- 2023 **All the Feels: A dexterous hand with large-area tactile sensing**
[Raunaq Bhirangi](#), Abigail DeFranco, Jacob Adkins, Carmel Majidi, Abhinav Gupta, Tess Hellebrekers, Vikash Kumar.
IEEE Robotics and Automation Letters, RA-L 2023.
- 2021 **Reskin: versatile, replaceable, lasting tactile skins**
[Raunaq Bhirangi](#)*, Tess Hellebrekers*, Carmel Majidi, Abhinav Gupta.
5th Annual Conference on Robot Learning, CoRL 2021.
Oral presentation
- 2023 **DragonClaw: A low-cost pneumatic gripper with integrated magnetic sensing**
Vani H Sundaram, [Raunaq Bhirangi](#), Mark E Rentschler, Abhinav Gupta, Tess Hellebrekers.
IEEE International Conference on Soft Robotics, RoboSoft 2023.

- 2020 **Inferring task-space central pattern generator parameters for closed-loop control of underactuated robots**
Nathan D Kent, [Raunaq M Bhirangi](#), Matthew Travers, Thomas M Howard.
IEEE International Conference on Robotics and Automation, ICRA 2020
- 2020 **Modular robot design synthesis with deep reinforcement learning**
Julian Whitman, [Raunaq Bhirangi](#), Matthew Travers, Howie Choset.
AAAI Conference on Artificial Intelligence, AAAI 2020.
- 2018 **Motion Planning for Handspring Maneuver Using a Two Link Robot**
[Raunaq Bhirangi](#), Vivek Sangwan.
ASME International Mechanical Engineering Congress and Exposition, IMECE 2018.

Teaching experience

- Spring 2021 Teaching assistant, Probabilistic Graphical Models (10-708), Carnegie Mellon University
- Fall 2020 Teaching assistant, Underactuated Robots (16-748), Carnegie Mellon University
- Spring 2018 Teaching assistant, Microprocessors and Automatic Control Lab (ME-310), IIT Bombay
- Spring 2017 Teaching assistant, Linear Algebra (MA-106), IIT Bombay

Mentorship and service

Departmental Service

- 2024 Mentor, NYU GSTEM Program
- 2021 – 2024 Mentor, CMU AI Mentorship Program
- 2021 – 2022 Department Lead, School of Computer Science Graduate Application Support Program
- 2020 – 2021 CMU School of Computer Science Dean's Advisory Committee
- 2017 – 2018 Mentor, IIT Bombay Student Mentorship Program

Reviewer

- 2024 – Robotics: Science and Systems (RSS)
- 2024 – International Conference on Machine Learning (ICML)
- 2024 – International Conference on Learning Representations (ICLR)
- 2022 – Neural Information Processing Systems (NeurIPS)
- 2021 – IEEE Robotics and Automation Letters (RA-L)
- 2020 – IEEE International Conference on Robotics and Automation (ICRA)
- 2020 – IEEE International Conference on Robotics and Automation (IROS)