Priya Sundaresan

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ACADEMIC BACKGROUND

Stanford University, Stanford, CA   2021 - 2026 (expected)
Ph.D. Candidate in Computer Science
Co-Advisors: Dorsa Sadigh, Jeannette Bohg

University of California, Berkeley, Berkeley, CA   2017 - 2021
M.S. in Electrical Engineering and Computer Science (2020-2021)   GPA: 3.790/4.0
Advisor: Ken Goldberg, Joseph Gonzalez
Master's Thesis: *Robotic Untangling and Disentangling of Cables via Learned Manipulation and Recovery Strategies*
B.S. in Electrical Engineering and Computer Science (2017-2020)   GPA: 3.701/4.00

EXPERIENCE

Intrinsic, Mountain View, CA
PhD Resident   06/2023 - 11/2023
Summer internship at Intrinsic, a robotics software and AI company at Alphabet. Collaborated with Google DeepMind on imitation learning from hand-drawn sketches.

Stanford Artificial Intelligence Lab, PhD Student   09/2021 - Present
Representation learning for sample-efficient, generalizable robot manipulation

Amazon Robotics, North Reading, MA
Part-Time Applied Scientist Contractor   9/2020 - 12/2021
Advanced R&D Robotics Intern   5/2020 - 8/2020
Research on vision-based grasp planners for warehouse automation

UC Berkeley AUTOLAB, Student Researcher   8/2018 - 5/2021
Advised by Ken Goldberg
Developed perception-driven algorithms for deformable object manipulation

PREPRINTS

[1] Juntao Ren, **Priya Sundaresan**, Dorsa Sadigh, Sanjiban Choudhury, Jeannette Bohg. Motion Tracks: A Unified Representation for Human-Robot Transfer in Few-Shot Imitation Learning. *arXiv, 2024.*

PUBLICATIONS

[18] **Priya Sundaresan***, Hengyuan Hu*, Quan Vuong, Jeannette Bohg, Dorsa Sadigh. What's the Move? Hybrid Imitation Learning via Salient Points. *To Appear, International Conference on Learning Representations (ICLR), 2025.*

[17] Rajat Kumar Jenamani*, **Priya Sundaresan***, Maram Sakr, Tapomayukh Bhattacharjee†, Dorsa Sadigh†. FLAIR: Feeding via Long-horizon AcquIsition of Realistic dishes. *Robotic Science and Systems (RSS), 2024.*

[16] **Priya Sundaresan**, Quan Vuong, Jiayuan Gu, Peng Xu, Ted Xiao, Sean Kirmani, Tianhe Yu, Michael Stark, Ajinkya Jain, Karol Hausman, Dorsa Sadigh*, Jeannette Bohg*, Stefan Schaal*. RT-Sketch: Goal-Conditioned Imitation Learning from Hand-Drawn Sketches. *Conference on Robot Learning (CoRL), 2024.* **Oral Presentation.**

[15] Jiayuan Gu, Sean Kirmani, Paul Wohlhart, Yao Lu, Montserrat Gonzalez Arenas, Kanishka Rao, Wenhao Yu, Chuyuan Fu, Keerthana Gopalakrishnan, Zhuo Xu, **Priya Sundaresan**, Peng Xu, Hao Su, Karol Hausman, Chelsea Finn, Quan

Vuong, Ted Xiao. RT-Trajectory: Robotic Task Generalization via Hindsight Trajectory Sketches. *International Conference on Learning Representations (ICLR), 2024.* **Spotlight Presentation.**

[14] Open X-Embodiment Collaboration [more than 150 authors]. Open X-Embodiment: Robotic Learning Datasets and RT-X Models. *International Conference on Robotic Automation (ICRA), 2024.* **Best Paper Award.**

[13] **Priya Sundaresan**, Suneel Belkhale, Dorsa Sadigh, Jeannette Bohg. KITE: Keypoint-Conditioned Policies for Semantic Manipulation. *Conference on Robot Learning (CoRL), 2023.*

[12] **Priya Sundaresan**, Jiajun Wu, Dorsa Sadigh. Learning Sequential Acquisition Policies for Robot-Assisted Feeding. *Conference on Robot Learning (CoRL), 2023.*

[11] Lorenzo Shaikewitz*, Yilin Wu*, Suneel Belkhale*, Jennifer Grannen, **Priya Sundaresan**, Dorsa Sadigh. In-Mouth Robotic Bite Transfer with Visual and Haptic Sensing. *International Conference on Robotics and Automation (ICRA), 2023.*

[10] **Priya Sundaresan**, Suneel Belkhale, Dorsa Sadigh. Learning Visuo-Haptic Skewering Strategies for Robot-Assisted Feeding. *Conference on Robot Learning (CoRL), 2022.* **Oral Presentation.**

[9] **Priya Sundaresan**, Rika Antonova, Jeannette Bohg. DiffCloud: Real-to-Sim from Point Clouds with Differentiable Simulation and Rendering of Deformable Objects. *International Conference on Intelligent Robots and Systems (IROS), 2022.*

[8] Rika Antonova, Jingyun Yang, **Priya Sundaresan**, Dieter Fox, Fabio Ramos, Jeannette Bohg. A Bayesian Treatment of Real-to-Sim for Deformable Object Manipulation. *IEEE Robotics and Automation Letters (RA-L), 2022.*

[7] Vainavi Viswanath*, Jennifer Grannen*, **Priya Sundaresan***, Brijen Thananjeyan, Ashwin Balakrishna, Ellen Novoseller, Jeffrey Ichnowski, Michael Laskey, Joseph E. Gonzalez, Ken Goldberg. Disentangling Dense Multi-Cable Knots. *International Conference on Intelligent Robots and Systems (IROS), 2021.*

[6] **Priya Sundaresan***, Jennifer Grannen*, Brijen Thananjeyan, Ashwin Balakrishna, Jeffrey Ichnowski, Ellen Novoseller, Minho Hwang, Michael Laskey, Joseph E. Gonzalez, Ken Goldberg. Untangling Dense Non-Planar Knots by Learning Manipulation Features and Recovery Policies. *Robotics: Science and Systems (RSS), 2021.*

[5] Aditya Ganapathi, **Priya Sundaresan**, Brijen Thananjeyan, Ashwin Balakrishna, Daniel Seita, Jennifer Grannen, Minho Hwang, Ryan Hoque, Joseph E. Gonzalez, Nawid Jamali, Katsu Yamane, Soshi Iba, Ken Goldberg. Learning Dense Visual Correspondences in Simulation to Smooth and Fold Real Fabrics. *International Conference on Robotics and Automation (ICRA), 2021.*

[4] **Priya Sundaresan***, Aditya Ganapathi*, Brijen Thananjeyan, Ashwin Balakrishna, Daniel Seita, Ryan Hoque, Joseph Gonzalez, Ken Goldberg. MMGSD: Multi-Modal Gaussian Shape Descriptors for Correspondence Matching in 1D and 2D Deformable Objects. *International Conference on Intelligent Robots and Systems (IROS), Workshop on Robotic Manipulation of Deformable Objects, 2020.*

[3] Jennifer Grannen*, **Priya Sundaresan***, Brijen Thananjeyan, Jeffrey Ichnowski, Ashwin Balakrishna, Minho Hwang, Vainavi Viswanath, Michael Laskey, Joseph E. Gonzalez, Ken Goldberg. Untangling Dense Knots by Learning Task-Relevant Keypoints. *Conference on Robot Learning (CoRL)*, 2020. Oral Presentation.

[2] **Priya Sundaresan**, Jennifer Grannen, Brijen Thananjeyan, Ashwin Balakrishna, Michael Laskey, Kevin Stone, Joseph E. Gonzalez, Ken Goldberg. Learning Rope Manipulation Policies Using Dense Object Descriptors Trained on Synthetic Depth Data. *International Conference on Robotics and Automation (ICRA), 2020.*

[1] **Priya Sundaresan**, Brijen Thananjeyan, Johnathan Chiu, Danyal Fer, Ken Goldberg. Automated Extraction of Surgical Needles from Tissue Phantoms. *Conference on Automation Science and Engineering (CASE), 2019.*

TEACHING	**Stanford Department of CS**, Course Assistant	9/2024 - 3/2025

CS 326 Head CA: Topics in Advanced Robotic Manipulation (Prof. Jeannette Bohg)
CS205L CA: Continuous Mathematical Methods with an Emphasis on Machine Learning (Prof. Ron Fedkiw)

UC Berkeley Department of EECS, Teaching Assistant   1/2019 - 5/2019
Discussion TA for introductory EE course (EE 16A) on circuit design/linear algebra

AWARDS

FANUC Student Fellowship	2022
National Science Foundation Graduate Research Fellowship	2021
Timothy B. Campbell Innovation Award, UC Berkeley EECS	2021
James H. Eaton Memorial Scholarship, UC Berkeley EECS	2020
Cal Alumni Association Leadership Award Scholarship	2019

OUTREACH

Stanford SAIL Lab Demos   2021-Present
Prepared and gave live robot demos to visiting middle and high school students throughout the school year, as well as during prospective admit weekends and campus events.

UC Berkeley AUTOLAB   2018-2021
Prepared and presented robot demos to prospective students at Cal day and lab visit days for local middle/high school students

Bioengineering Honor Society, Webmaster/Projects Chair   2018-2019
Prototyped hardware demos to showcase at local middle/high schools and built club website from scratch
Volunteered at BioEngineering High School Competition (BioEHSC), a student-run science fair where UC Berkeley undergraduates mentor local high school students on a semester-long research project

ACADEMIC SERVICE

External Reviewer for Conferences, Journals
IEEE Transactions on Robotics (T-RO) : 2024
IEEE Robotics and Automation Letters: 2024
The International Journal of Robotics Research: 2024
Springer Autonomous Robots: 2024
Conference on Robot Learning (CoRL): 2024
International Conference on Robotics and Automation (ICRA): 2024
Conference on Robot Learning (CoRL): 2023
International Conference on Robotics and Automation (ICRA): 2023

Robotics and Automation Letters (RA-L): 2022.
International Conference on Intelligent Robots and Systems (IROS): 2022
International Conference on Robotics and Automation (ICRA): 2021