

# Suraj Nair

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- EDUCATION**
- Stanford University**, Stanford, CA 2018-2023  
*Ph.D.* in Computer Science  
Thesis: [Scaling Deep Robotic Learning to Broad Real-World Data](#)  
Advisors: Chelsea Finn, Silvio Savarese
- California Institute of Technology**, Pasadena, CA 2014-2018  
*Bachelor of Science* in Computer Science GPA: 3.9/4.0  
Advisor: Yisong Yue
- EXPERIENCE**
- Toyota Research Institute (TRI)**, Research Scientist 2023-Present  
**Facebook AI Research**, Research Intern/Student Researcher 2021-2022  
**Google Brain**, Research Intern/Student Researcher 2018-2019  
**Stanford Vision and Learning Lab**, Visiting Researcher 2017  
**Vizzario, Inc.**, Machine Learning Consultant 2017  
**Caltech DOLCIT**, Student Researcher 2016-2018  
**General Electric, Current**, Software Development Intern 2016  
**KloudData, Inc.**, Software Engineering Intern 2015
- PUBLICATIONS & PREPRINTS**
- [22] Siddharth Karamcheti, **Suraj Nair**, Annie S. Chen, Thomas Kollar, Chelsea Finn, Dorsa Sadigh, Percy Liang. Language-Driven Representation Learning for Robotics. *Robotics Science and Systems (RSS)*. 2023.
- [21] Maximilian Du, **Suraj Nair**, Dorsa Sadigh, Chelsea Finn Behavior Retrieval: Few-Shot Imitation Learning by Querying Unlabeled Datasets. *Robotics Science and Systems (RSS)*. 2023.
- [20] **Suraj Nair**, Aravind Rajeswaran, Vikash Kumar, Chelsea Finn, Abhinav Gupta. R3M: A Universal Visual Representation for Robot Manipulation. *Conference on Robot Learning (CoRL)*. 2022.
- [19] Maximilian Du\*, Olivia Y. Lee\*, **Suraj Nair**, Chelsea Finn. Play it by Ear: Learning Skills amidst Occlusion through Audio-Visual Imitation Learning. *Robotics: Science and Systems (RSS)*. 2022
- [18] **Suraj Nair**, Eric Mitchell, Kevin Chen, Brian Ichter, Silvio Savarese, Chelsea Finn. Learning Language-Conditioned Robot Behavior from Offline Data and Crowd-Sourced Annotation. *Conference on Robot Learning (CoRL)*. 2021.
- [17] Bohan Wu, **Suraj Nair**, Li Fei-Fei\*, Chelsea Finn\*. Example-Driven Model-Based Reinforcement Learning for Solving Long-Horizon Visuomotor Tasks. *Conference on Robot Learning (CoRL)*. 2021.
- [16] Mohammad Babaeizadeh, Mohammad Taghi Saffar, **Suraj Nair**, Sergey Levine, Chelsea Finn, Dumitru Erhan. FitVid: Overfitting in Pixel-Level Video Prediction. *Arxiv Preprint*. 2021
- [15] Annie Chen, **Suraj Nair**, Chelsea Finn. Learning Generalizable Robotic Reward Functions from "In-The-Wild" Human Videos. *Robotics: Science and Systems (RSS)*. 2021
- [14] Bohan Wu, **Suraj Nair**, Roberto Martin-Martin, Li Fei-Fei\*, Chelsea Finn\*. Greedy

Hierarchical Variational Autoencoders for Large-Scale Video Prediction, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. 2021

[13] Stephen Tian, **Suraj Nair**, Frederik Ebert, Sudeep Dasari, Benjamin Eysenbach, Chelsea Finn, Sergey Levine. Model-Based Visual Planning with Self-Supervised Functional Distances. *International Conference on Learning Representations (ICLR)*. 2021.

[12] Annie Chen\*, HyunJi Nam\*, **Suraj Nair\***, Chelsea Finn. Batch Exploration with Examples for Scalable Robotic Reinforcement Learning. *Robotics and Automation Letters (RA-L) and IEEE International Conference on Robotics and Automation (ICRA)*. 2021

[11] Brijen Thananjeyan\*, Ashwin Balakrishna\*, **Suraj Nair**, Michael Luo, Krishnan Srinivasan, Minh Hwang, Joey E. Gonzalez, Chelsea Finn, Ken Goldberg. Recovery RL: Safe Reinforcement Learning with Learned Recovery Zones. *Robotics and Automation Letters (RA-L) and IEEE International Conference on Robotics and Automation (ICRA)*. 2021

[10] **Suraj Nair**, Silvio Savarese, Chelsea Finn. Goal-Aware Prediction: Learning to Model What Matters. *International Conference on Machine Learning (ICML)*. 2020.

[9] Henrik Marklund\*, **Suraj Nair\***, Chelsea Finn. Exact (Then Approximate) Dynamics Programming for Deep Reinforcement Learning *Workshop on Biases, Invariances, and Generalization in RL, International Conference on Machine Learning (ICML)*. 2020.

[8] **Suraj Nair**, Chelsea Finn. Hierarchical Foresight: Self-Supervised Learning of Long-Horizon Tasks via Visual Subgoal Generation. *International Conference on Learning Representations (ICLR)*. 2020.

[7] **Suraj Nair**, Mohammad Babaeizadeh, Chelsea Finn, Sergey Levine, Vikash Kumar. Time Reversal As Self-Supervision. *IEEE International Conference on Robotics and Automation (ICRA)*. 2020.

[6] **Suraj Nair**, Yuke Zhu, Silvio Savarese, Li Fei-Fei. Causal Induction from Visual Observations for Goal Directed Tasks. *Workshop on Causal Machine Learning, Neural Information Processing Systems (NeurIPS)*. 2019.

[5] Sudeep Dasari, Frederik Ebert, Stephen Tian, **Suraj Nair**, Bernadette Bucher, Karl Schmeckpeper, Siddharth Singh, Sergey Levine, Chelsea Finn. RoboNet: Large-Scale Multi-Robot Learning. *Conference on Robot Learning (CoRL)*. 2019.

[4] De-An Huang\*, **Suraj Nair\***, Danfei Xu\*, Yuke Zhu, Animesh Garg, Li Fei-Fei, Silvio Savarese, Juan Carlos Niebles. Neural Task Graphs: Generalizing to Unseen Tasks from a Single Video Demonstrations. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. 2019.

[3] Danfei Xu\*, **Suraj Nair\***, Yuke Zhu, Julian Gao, Animesh Garg, Li Fei-Fei, Silvio Savarese. Neural Task Programming: Learning to Generalize Across Hierarchical Tasks. *IEEE International Conference on Robotics and Automation (ICRA)*. 2018.

[2] Men-Andrin Meier, Zachary E Ross, Anshul Ramachandran, Ashwin Balakrishna, **Suraj Nair**, Peter Kundzicz, Zefeng Li, Jennifer Andrews, Egill Hauksson, Yisong Yue. Reliable RealTime Seismic Signal/Noise Discrimination With Machine Learning. *Journal of Geophysical Research: Solid Earth*. 2019.

[1] **Suraj Nair**, Anshul Ramachandran, Peter Kundzicz. Annotated Reconstruction of 3D Spaces Using Drones. *IEEE MIT URTC*. 2017. **Best Paper Presentation**.

INVITED  
TALKS

Supervising Robot Learning with Human Video Data

3 <sup>rd</sup> International Ego4D Workshop @ CVPR 2023 Keynote .	June 2023
<b>Scaling Deep Robotic Learning to Broad Real-World Data</b>	
Boston Dynamics AI Institute.	December 2022
Tesla.	December 2022
Toyota Research Institute (TRI).	November 2022
Allen Institute for AI (AI2).	November 2022
Dyson Robotics.	October 2022
<b>Supervising Robot Learning with Language and Video from the Web</b>	
Columbia Artificial Intelligence and Robotics Lab	March 2023
Covariant.ai.	October 2022
MILA.	September 2022
Toyota Research Institute (TRI).	June 2022
Nuro.ai.	April 2022
University of Cambridge Language Technology Lab Seminar.	November 2021
<b>Time Reversal as Self-Supervision</b>	
Berkeley Robotic Artificial Intelligence and Learning Lab.	October 2018

## TEACHING

<i>Head Teaching Assistant, Stanford University</i>	
CS 330: Deep Multi-Task and Meta Learning	2022
<i>Teaching Assistant, Stanford University</i>	
CS 330: Deep Multi-Task and Meta Learning	2019, 2020
<i>Teaching Assistant, California Institute of Technology</i>	
CS/EE 155: Machine Learning/Data Mining	2017
CS 121: Introduction to Relational Databases	2016

## AWARDS & HONORS

Best Paper Award Finalist (Robotics Science and Systems)	2023
<i>For "Language-Driven Representation Learning for Robotics."</i>	
Best Paper Award (ICRA Scaling Robot Learning Workshop)	2022
<i>For "R3M: A Universal Visual Representation for Robot Manipulation"</i>	
Robotics: Science and Systems (RSS) Pioneer	2022
<i>Selected as one of 30 top early career researchers in robotics</i>	
ICLR Highlighted Reviewer Award	2021, 2022
<i>Awarded to top 10% of reviewers</i>	
Stanford Nominee for Apple ML/AI PhD Fellowship	2020
<i>Selected as one of 5 university nominees</i>	
National Science Foundation Graduate Research Fellowship	2018-2021
Best Paper Presentation - IEEE MIT URTC	2017
Caltech Summer Undergraduate Research Fellowship Recipient	2017
1 <sup>st</sup> Place GE Digital Intern Hackathon	2016

## PROFESSIONAL ACTIVITIES

<i>Workshop Organization:</i>	
Co-Organizer: Deep Reinforcement Learning Workshop at NeurIPS 2022	
Co-Organizer: Workshop on Learning from Diverse, Offline Data at RSS 2022	
Co-Organizer: Workshop on Learning from Diverse, Offline Data at ICRA 2023	
<i>Paper Reviewing:</i>	
Neural Information Processing Systems (NeurIPS) 2020-2022	
International Conference on Machine Learning (ICML) 2020-2022	
International Conference on Learning Representations (ICLR) 2019-2022	
IEEE International Conference on Robotics and Automation (ICRA) 2019-2021	
Conference on Robot Learning (CoRL) 2021, 2022	
Robotics Science and Systems (RSS) 2023	
IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2019, 2020	

International Conference on Computer Vision (ICCV) 2021

**ADVISING &  
MENTORSHIP**

Niveditha Iyer  
Patricia Strutz  
Olivia Lee  
Maximilian Du  
HyunJi Nam  
Annie Chen

B.S., Stanford  
B.S., Stanford  
B.S., Stanford  
B.S., Stanford  
B.S. Stanford, Next: Software engineer at ScaleAI  
B.S. Stanford, Next: Ph.D. CS, Stanford