Soroush Nasiriany

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Education

The University of Texas at Austin
Ph.D., Computer Science — 2020 – present
Adviser: Prof. Yuke Zhu
GPA: 4.0/4.0

University of California, Berkeley
M.S., Electrical Engineering and Computer Science — 2019 – 2020
Adviser: Prof. Sergey Levine
GPA: 4.0/4.0

B.A., Computer Science — 2015 – 2019
GPA: 3.97/4.0

Selected coursework: Deep RL, Deep Unsupervised Learning, Robot Learning, Human-Robot Interaction, Convex Optimization, Linear System Theory, Visual Perception, Sensory-Motor Systems, Grounded NLP

Research Experience

Robot Perception and Learning Lab (RPL), UT Austin — 2020 – present
Advised by Professor Yuke Zhu
Research Focus: Robot Learning, Robot Manipulation, Imitation Learning

Robotic AI & Learning Lab (RAIL), UC Berkeley — 2016 – 2020
Advised by Professor Sergey Levine
Research Focus: Deep Reinforcement Learning, Planning, Representation Learning

Molecular Cell Biomechanics Lab, UC Berkeley — 2015 – 2016
Advised by Professor Mohammad Mofrad
Research Focus: NLP, Machine Learning for Health

Industry Experience

Research Intern, NVIDIA — Sept 2024 - present
Generalist Embodied Agent Research group

Research Intern, Google DeepMind — Oct 2023 - July 2024
Foundation models for robotics

Research Intern, NVIDIA — June 2022 - Jan 2023
Scaling imitation learning with automatically generated robot demonstrations

Software Engineering Intern, Facebook — May 2017 - Aug 2017
Managing distributed systems at scale with Apache ZooKeeper

Publications and Manuscripts

RT-Affordance: Affordances are Versatile Intermediate Representations for Robot Manipulation
Soroush Nasiriany, Sean Kirmani, Tianli Ding, Laura Smith, Yuke Zhu, Danny Driess, Dorsa Sadigh, Ted Xiao
preprint, 2024

RoboCasa: Large-Scale Simulation of Everyday Tasks for Generalist Robots
Soroush Nasiriany, Abhiram Maddukuri*, Lance Zhang*, Adeet Parikh, Aaron Lo, Abhishek Joshi, Ajay Mandlekar, Yuke Zhu
Robotics: Science and Systems (RSS), 2024

DROID: A Large-Scale In-The-Wild Robot Manipulation Dataset
Alexander Khazatsky, Karl Pertsch, Suraj Nair, Ashwin Balakrishna, Sudeep Dasari, Siddharth Karamcheti, **Soroush Nasiriany**, ..., Yuke Zhu, Thomas Kollar, Sergey Levine, Chelsea Finn
Robotics: Science and Systems (RSS), 2024

PIVOT: Iterative Visual Prompting Elicits Actionable Knowledge for VLMs
Soroush Nasiriany*, Fei Xia*, Wenhao Yu*, Ted Xiao*, Jacky Liang, Ishita Dasgupta, Annie Xie, Danny Driess, Ayzaan Wahid, Zhuo Xu, Quan Vuong, Tingnan Zhang, Tsang-Wei Edward Lee, Kuang-Huei Lee, Peng Xu, Sean Kirmani, Yuke Zhu, Andy Zeng, Karol Hausman, Nicolas Heess, Chelsea Finn, Sergey Levine, Brian Ichter*
International Conference on Machine Learning (ICML), 2024

PRIME: Scaffolding Manipulation Tasks with Behavior Primitives for Data-Efficient Imitation Learning
Tian Gao, **Soroush Nasiriany**, Huihan Liu, Quantao Yang, Yuke Zhu
IEEE Robotics and Automation Letters (RA-L), 2024

MimicGen: A Data Generation System for Scalable Robot Learning using Human Demonstrations
Ajay Mandlekar, **Soroush Nasiriany***, Bowen Wen*, Iretiayo Akinola, Yashraj Narang, Linxi Fan, Yuke Zhu, Dieter Fox
Conference on Robot Learning (CoRL), 2023

Robot Learning on the Job: Human-in-the-Loop Manipulation and Learning During Deployment
Huihan Liu, **Soroush Nasiriany**, Lance Zhang, Zhiyao Bao, Yuke Zhu
Robotics: Science and Systems (RSS), 2023
Best Paper Award Finalist

Learning and Retrieval from Prior Data for Skill-based Imitation Learning
Soroush Nasiriany, Tian Gao, Ajay Mandlekar, Yuke Zhu
Conference on Robot Learning (CoRL), 2022

Augmenting Reinforcement Learning with Behavior Primitives for Diverse Manipulation Tasks
Soroush Nasiriany, Huihan Liu, Yuke Zhu
IEEE International Conference on Robotics and Automation (ICRA), 2022
Outstanding Learning Paper

What Matters in Learning from Offline Human Demonstrations for Robot Manipulation
Ajay Mandlekar, Danfei Xu, Josiah Wong, **Soroush Nasiriany**, Chen Wang, Rohun Kulkarni, Li Fei-Fei, Silvio Savarese, Yuke Zhu, Roberto Martín-Martín
Conference on Robot Learning (CoRL), 2021
Oral Presentation

robosuite: A Modular Simulation Framework and Benchmark for Robot Learning
Yuke Zhu, Josiah Wong, Ajay Mandlekar, Roberto Martín-Martín, Abhishek Joshi, **Soroush Nasiriany**, Yifeng Zhu
Technical report, 2020

DisCo RL: Distribution-Conditioned Reinforcement Learning for General-Purpose Policies
Soroush Nasiriany*, Vitchyr H. Pong*, Ashvin Nair*, Alexander Khazatsky, Glen Berseth, Sergey Levine
IEEE International Conference on Robotics and Automation (ICRA), 2021

Planning with Goal-Conditioned Policies
Soroush Nasiriany*, Vitchyr H. Pong*, Steven Lin, Sergey Levine
Advances in Neural Information Processing Systems (NeurIPS), 2019

A Comprehensive Guide to Machine Learning
Soroush Nasiriany, Garrett Thomas, William Wei Wang, Alex Yang, Jennifer Listgarten, Anant Sahai
CS 189 Official Course Textbook, 2018
snasiriany.me/files/ml-book.pdf

Text Analysis and Automatic Triage of Posts in a Mental Health Forum
Ehsaneddin Asgari, **Soroush Nasiriany**, Mohammad R.K. Mofrad
NAACL-HLT Workshop on Computational Linguistics and Clinical Psychology, 2016

Open Source Projects

RoboCasa: Large-Scale Simulation of Everyday Tasks for Generalist Robots
github.com/robocasa/robocasa
Project lead.

RoboSuite: A Modular Simulation Framework and Benchmark for Robot Learning
github.com/ARISE-Initiative/robosuite
Core developer.

RoboMimic: A Framework for Robot Learning from Demonstration
github.com/ARISE-Initiative/robomimic
Core developer.

MimicGen: A Data Generation System for Scalable Robot Learning using Human Demonstrations
github.com/NVlabs/mimicgen
Contributor.

Teaching and Service

CS 391R: Robot Learning, UT Austin

CS 343: Artificial Intelligence, UT Austin

CS 189: Machine Learning, UC Berkeley
Lead developer of official course guide: snasiriany.me/files/ml-book.pdf

CS 285: Deep Reinforcement Learning, UC Berkeley

Reviewer for CoRL, ICRA, NeurIPS, ICLR, ICML, IROS, IJRR

Organizer of UT Robot Learning Reading Group

Member of admissions committee, UT Austin Computer Science Master's program