

# RUTAV SHAH

rutavms@utexas.edu | shahrutav.github.io | github.com/ShahRutav

## EDUCATION

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### The University of Texas at Austin

Ph.D. student in Computer Science

**Advisors:** Professor Roberto Martín Martín and Professor Yuke Zhu

**Research Focus:** Foundation Models, Robotics

August 2022 - Now

Austin, USA

### Indian Institute of Technology, Kharagpur

Undergraduate in Computer Science, GPA: 9.64/10

**Advisors:** Dr. Vikash Kumar and Professor Abir Das

**Research Focus:** Representation Learning, Domain Adaptation, Robotics

July 2018 - April 2022

Kharagpur, India

## PUBLICATIONS & MANUSCRIPTS

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\* Equal contribution. † Equal advising

### BUMBLE: Unifying Reasoning and Acting with VLMs for Building-Wide Mobile Manipulation

Rutav Shah, Albert Yu, Yifeng Zhu, Yuke Zhu<sup>†</sup>, Roberto Martín Martín<sup>†</sup>

*arXiv preprint arXiv:2410.06237*

### LOTUS: Continual Imitation Learning for Robot Manipulation Through Unsupervised Skill Discovery

Weikang Wan, Yifeng Zhu\*, Rutav Shah\*, Yuke Zhu

*International Conference on Robotics and Automation (ICRA), 2024*

### Open X-Embodiment: Robotic Learning Datasets and RT-X Models

Open X-Embodiment Collaboration

**Best Conference Paper Award**

*International Conference on Robotics and Automation (ICRA), 2024*

### MUTEX: Learning Unified Policies from Multimodal Task Specifications

Rutav Shah, Roberto Martín-Martín<sup>†</sup>, Yuke Zhu<sup>†</sup>

*Conference on Robot Learning (CoRL), 2023*

### RoboHive: A Unified Framework for Robot Learning

Vikash Kumar, Rutav Shah\*, Gaoyue Zhou\*, Vincent Moens, Vittorio Caggiano, Jay Vakil, Abhishek Gupta, Aravind Rajeswaran

*Neural Information Processing Systems (NeurIPS) Track on Datasets and Benchmarks, 2023*

### Inflatable Fingertips with Stretchable Pressure Sensors for Adaptive Grasping and Manipulation

Hongyang Shi, Rutav Shah, Zhengjie Li, Heeyong Huh, Yuke Zhu, Nanshu Lu

*IROS Workshop on IPPC for Physically and Contextually-Aware Robot Autonomy, 2023*

### RRL: Resnet as Representation for Reinforcement Learning

Rutav Shah\*, Vikash Kumar\*

*International Conference on Machine Learning (ICML), 2021*

### Contrast and Mix: Temporal Contrastive Video Domain Adaptation with Background Mixing

Aadarsh Sahoo, Rutav Shah, Rameswar Panda, Kate Saenko, Abir Das

*Neural Information Processing Systems (NeurIPS), 2021*

## EXPERIENCE

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### KLA-Tencor Corporation

Algorithm Research & Development Intern

Developed GPU-accelerated implementation of Random Decision Forests

Feb. 2022 - July 2022

Chennai, India

## Developer for JEE Advanced'2021

**Supervisor:** Professor Mainack Mondal and Professor Debajit Chakraborty

Implemented algorithm for seat allocation and designed website for JEE Advanced'2021

Sept. 2021 - Dec. 2021

*IIT Kharagpur, India*

## Robotics Institute Summer Scholar (RISS) program

**Advisors:** Dr. Vikash Kumar and Professor Abhinav Gupta

Research in learning generalizable policy using representation learning.

June 2021 - Aug. 2021

*Carnegie Mellon University, USA*

## Autonomous Ground Vehicle (AGV) Lab

**Advisor:** Professor Debajit Chakraborty

Developed planning algorithms and tested them on Mahindra E2O for autonomous navigation.

April 2019 - Dec. 2020

*IIT Kharagpur, India*

## TEACHING & OUTREACH

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### Organizer of Robot Learning Reading Group

Website: [ut-robotlearning.github.io](https://ut-robotlearning.github.io)

April. 2022 - April 2024

*UT Austin, USA*

### Graduate Teaching Assistant

RBT350: Gateway to Robotics, Undergraduate Course

Jan. 2024 - April 2024

*UT Austin, USA*

### Graduate Teaching Assistant

RBT350: Gateway to Robotics, Undergraduate Course

Aug. 2023 - Dec. 2023

*UT Austin, USA*

### Teaching Assistant

Math Camp for students of *Grade 9-12*, Epsilon Camp, Raising a Mathematician

April 2022

*Online*

### RoboLaunch

Outreach program to increase high-school engagement in robotics.

Aug. 2021 - Dec. 2021

*Carnegie Mellon University, USA*

## ACHIEVEMENTS

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- **1st Position, Bosch Mid-Prep, Inter-IIT TechMeet**, *Indian Institute of Technology, India, 2022*
- **Runner Up Position, Intelligent Ground Vehicle Competition (IGVC)**, *Oakland University, USA, 2019*
- **2nd Position, Mathematical Olympiad**, *Indian Institute of Technology, Kharagpur, 2019*
- **JEE Advanced, All India Rank 257 (Top 0.1%)**, *Indian Institute of Technology (IITs), 2018*
- **KVPY, All India Rank 278 (Top 1%)**, *Department of Science and Technology, Government of India, 2017*
- **Merit in Indian National Mathematical Olympiad**, *Homi Bhabha Centre for Science Education, 2016*