

RUTAV SHAH

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EDUCATION

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

* Equal contribution. † Equal advising

Casper: Inferring Diverse Intents for Assistive Teleoperation with Vision Language Models

Huihan Liu, **Rutav Shah**, Shuijing Liu, Jack Pittenger, Mingyo Seo, Yuchen Cui, Yonatan Bisk, Roberto Martín-Martín, Yuke Zhu

Technical Report, 2025

SCIZOR: Self-Supervised Data Curation for Large-Scale Imitation Learning

Yu Zhang, Yuqi Xie, Huihan Liu*, **Rutav Shah***, Michael Wan, Linxi “Jim” Fan, Yuke Zhu

Technical Report, 2025

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

Rutav Shah, Albert Yu, Yifeng Zhu, Yuke Zhu†, Roberto Martín Martín†

IEEE, International Conference on Robotics and Automation (ICRA), 2025

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

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

IEEE, 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

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

MUTEX: Learning Unified Policies from Multimodal Task Specifications

Rutav Shah, Roberto Martín-Martín†, Yuke Zhu†

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

Robotics and AI Institute

Graduate Research Intern

June. 2025 - Aug. 2025

Boston, USA

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

Podcast: Kinematic Conversations with Ilir Aliu

Link: youtu.be/A7Vx6NDLaz4

Nov. 2024

Organizer of Robot Learning Reading Group

Website: 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

- **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**