Abhishek Joshi

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Education

Princeton University Aug 2024 - Dec 2025
M.S. Computer Science
- Advisor: Dr. Jia Deng
- GPA: 4.0/4.0

University of Texas at Austin Aug 2020 - May 2024
B.S. Honors in Computer Science (Turing Scholars Program), Mathematics
- Advisor: Dr. Yuke Zhu
- GPA: 3.94/4.0

Research Objectives

Robot Learning, Robotic Data Generation/Scaling, Physical Simulation

Research Experience

Princeton Vision and Learning Lab (PVL) Princeton, NJ
Graduate Researcher, Advisor: Dr. Jia Deng Aug 2024 - Present
- Spearheaded Infinigen-Sim, a system for procedural generation of articulated assets in robotics simulation.
- Conducted robot learning research on tactile sensing, including large-scale demonstration collection and RL model training.
- Contributed to a procedural generation benchmark for evaluating the robustness of computer vision models.

Robot Perception and Learning Lab (RPL) Austin, TX
Undergraduate Researcher, Advisor: Dr. Yuke Zhu Aug 2020 - May 2024
- Core contributor to Robosuite and RoboCasa, developing and expanding robot models, tasks, and automated asset pipelines.
- Co-trained behavior cloning policies using real world and simulation data for household tasks.
- Executed real-world experiments on a Franka Panda, collecting 700+ demos and refining sim-to-real behavior cloning models.
- Conducted baseline experiments and implemented a transformer policy for the VIOLA effort.

Industry Experience

Research Engineering Contractor Remote
Google DeepMind, MuJoCo Team Aug 2023 – Oct 2024
- Led development of MuJoCo-to-USD trajectory export, enabling high-quality, photorealistic simulation.
- Project adopted by large-scale robot learning research efforts such as Robosuite, RoboCasa, Sirius-Fleet, and DexMimicGen.

Software Engineer Intern Redmond, WA
Amazon Web Services, AWS Aurora Team May 2023 – Aug 2023
- Built a C-based memory leak detection tool for PostgreSQL queries, cutting debugging time by over 80%.
- Automated analysis of 150+ PostgreSQL tests, streamlining memory-related issue detection across builds.
- Developed Python automation scripts to cherry-pick batches of commits from open source to AWS's internal codebase.

Software Engineer Intern Grapevine, TX
Paycom, Web UI/UX Team May 2022 – Aug 2022
- Created a full stack reporting and time tracking app to optimize agile sprints for 50+ developer teams.

- Enhanced a React + Redux app for interactive organizational charts, improving UI responsiveness and user experience.
- Awarded team leader of 8 for building a React app with MySQL and C# in under 72 hours during hackathon.

Publications

Infinigen-Sim: Procedural Generation of Articulated Simulation Assets

A. Joshi, B. Han, J. Nugent, Y. Zuo, J. Liu, H. Wen, S. Alexandropoulos, T. Sun, A. Raistrick, G. Liu, Y. Shao, J. Deng

ArXiv, 2025

Zero-shot Sim2Real Transfer for Magnet-Based Tactile Sensor on Insertion Tasks

B. Han, ***A. Joshi***, J. Deng

ArXiv, 2025

RoboCasa: Large-Scale Simulation of Everyday Tasks for Generalist Robots

S. Nasiriany, A. Maddukuri, L. Zhang, A. Parikh, A. Lo, ***A. Joshi***, A. Mandlekar, Y. Zhu

Robotics: Science and Systems (RSS), 2024

Utilizing Diverse and Scalable Simulation for Mobile Manipulators in Human-Centric Environments

A. Joshi, Y. Zhu

University of Texas at Austin Undergraduate Honors Thesis, 2024

Nominated for Best Undergraduate Honors Thesis

VIOLA: Imitation Learning for Vision-Based Manipulation with Object Proposal Priors

Y. Zhu, ***A. Joshi***, P. Stone, Y. Zhu

Conference on Robot Learning (CoRL), 2023

robosuite: A modular simulation framework and benchmark for robot learning

Y. Zhu, J. Wong, A. Mandlekar, Roberto Martín-Martín, ***A. Joshi***, S. Nasiriany, Y. Zhu

Technical report, 2020

Open Source Contributions

Infinigen

github.com/princeton-vl/infinigen

Procedural generation of 3D scenes and assets

RoboCasa

github.com/robocasa/robocasa

Large-scale robot simulation framework featuring diverse tasks, scenes, and robots

MuJoCo

github.com/google-deepmind/mujoco

General purpose physics engine for robot learning, biomechanics, graphics, and ML research in simulation

robosuite

github.com/ARISE-Initiative/robosuite

A modular simulation framework and benchmark for robot learning

Technologies

Languages: Python, C++, C, Java, SQL, JavaScript, HTML, CSS

Tools: PyTorch, TensorFlow, NumPy, ROS, Docker, Linux, AWS, PostgreSQL, CMake, Git