Pranav Atreya

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Education

University of Texas at Austin	**Aug 2019 – May 2023**
BS in Computer Science, Turing Scholar (CS Honors)	*Austin, TX*

Research Experience

Research Assistant under Dr. Joydeep Biswas   **Jan 2020 – Present**
- **Project 1:** Machine learning for efficient optimal kinodynamic motion planning (Published in AAMAS 2022)
- **Project 2:** Dynamics learning and optimization for high-speed accurate robot control (Published in IROS 2022)
- **Project 3:** Computer vision and inverse dynamics learning for cross-terrain navigation (Published in IROS 2022)
- **Project 4:** Program synthesis for state-of-the-art multi-objective reinforcement learning (In progress)
- **Project 5:** Pushing the limits of high speed, pinpoint accurate ground robot control (In progress)

Research Assistant under Dr. Yuke Zhu   **Jan 2022 – Present**
- **Project 1:** Joint pose estimation and novel view synthesis for few-view 3D reconstruction (In progress)
- **Project 2:** Imitation learning with past experience retrieval using cross-attention (In progress)

Research Assistant under Dr. Eunsol Choi   **Jun 2022 – Present**
- **Project 1:** Intelligent prompting of Large Language Models for high-recall, multi-answer QA (In progress, towards undergraduate honors thesis)

Publications

Atreya, P., Karnan, H., Sikand K., Xiao X., Rabiee, S., & Biswas, J. High-Speed Accurate Robot Control using Learned Forward Kinodynamics and Non-linear Least Squares Optimization. *2022 IEEE/RSJ International Conference on Intelligent Robots and Systems.*

Karnan, H., Sikand K., **Atreya, P.**, Rabiee, S., Xiao X., Warnell, G., Stone, P., & Biswas, J. VI-IKD: High-Speed Accurate Off-Road Navigation using Learned Visual-Inertial Inverse Kinodynamics. *2022 IEEE/RSJ International Conference on Intelligent Robots and Systems.*

Atreya, P., & Biswas, J. 2022. State Supervised Steering Function for Sampling-based Kinodynamic Planning. In Proceedings of the 21st International Conference on Autonomous Agents and Multiagent Systems (AAMAS '22). International Foundation for Autonomous Agents and Multiagent Systems, Richland, SC, 35–43.

Work Experience

Software Engineering Intern at Citi	**Jun 2022 – Aug 2022**
Summer Research Intern at Autonomous Mobile Robotics Laboratory	**Jun 2021 – Aug 2021**
Summer Research Intern at Autonomous Mobile Robotics Laboratory	**Jun 2020 – Aug 2020**
Independent Researcher/Science Fair Competitor	**Jan 2017 – May 2019**

Honors/Awards

2022	Winner of the Capital of Texas Undergraduate Research Conference (CTURC)
2021	Best Virtual Reality Hack @Hack The Northeast │ Best iOS App @Orion Hacks
2019	First Award, Physical Science & Engineering, Synopsys Technology Championship │ Mu Alpha Theta Award for Excellence in Mathematics │ AP National Scholar with Distinction, National Merit Scholarship Commended
2018	Honorable Mention, Computational Systems & Analysis, California Science and Engineering Fair │ First Award, Biological Science & Engineering, Synopsys Technology Championship │ Naval Science Award, United States Navy & Marine Corps │ Recognition for Science Research, Mayor of Cupertino
2017	Special Congressional Recognition - Congressional App Challenge │ Inspire Award, Silicon Valley Regional Robotics Competition │ USA Computing Olympiad (USACO) Gold Level

Service

Teaching Assistant for CS 343 Artificial Intelligence	**Spring 2023**
Co-organizer, 11th Annual F1TENTH Racing Competition at CPS-IoT Week 2023	**2022 – 2023**
Reviewer for IROS	**2022**
AURA-Texas Representative at UT Austin	**2022 – Present**
Student Research Ambassador at UT Austin	**2021 – Present**
Volunteer at Kaiser Permanente Hospital	**2018 – 2019**
Teaching Assistant for AP Calculus BC and AP Physics C	**2017 – 2019**