

Education

PhD, Computer Science and Engineering, University of Washington Advisor: Dr. Siddhartha S. Srinivasa	2017 – Present
MS, Robotics, Carnegie Mellon University [Transferred to UW] Advisor: Dr. Siddhartha S. Srinivasa	2016 – 2017
B.Tech, Mechanical Engineering, Indian Institute of Technology Madras Advisor: Dr. Arun D. Mahindrakar	2012 – 2016

Experience

Personal Robotics Laboratory University of Washington	Graduate Research Assistant 2017 – Present
With a research interest that lies at the intersection of planning and learning, I work on search-based geometric motion planning and decision-making under uncertainty in application to robotics.	
Personal Robotics Laboratory Carnegie Mellon University	Graduate Research Assistant 2016 – 2017
Studied the application of double quaternions for solving the inverse kinematics of high DoF robot manipulators, specifically the Kinova Jaco.	
Dynamics and Control Laboratory Indian Institute of Technology, Madras	Undergraduate Research Assistant 2015 – 2016
My Bachelor's Thesis investigated the application of the Leapfrog algorithm and Pontryagin's Maximum Principle to generate time, distance, and fuel optimal trajectories for mobile robots.	
Systemantics India Pvt. Ltd. Bangalore	Summer Research Intern 2014 – 2015
Modelled the dynamics of a hybrid manipulator Modelled the dynamics of a hybrid manipulator for trajectory tracking and control in performing industry-precision manipulation tasks.	
Raftar Formula Racing Indian Institute of Technology Madras	Vehicle Dynamics Engineer 2013 – 2014
Designed and manufactured the suspension system of a Formula-style racecar for Formula Student Combustion (FSC) Germany, 2014.	

Academic Honors

- **Best Student Paper Award [See C1]**
29th International Conference on Automated Planning and Scheduling, 2019
Generalized Lazy Search for Robot Motion Planning: Interleaving Search and Edge Evaluation via Event-based Toggles.
- **Best Demonstration Award [See D1]**
32nd Conference on Neural Information Processing Systems (NeurIPS), 2018
Autonomous robot feeding for upper-extremity mobility impaired people: Integrating sensing, perception, learning, motion planning, and robot control.

Publications

- International Conferences

- C1 **Generalized Lazy Search for Robot Motion Planning: Interleaving Search and Edge Evaluation via Event-based Toggles**, A. Mandalika, S. Choudhury, O. Salzman and S.S. Srinivasa. In *International Conference on Automated Planning and Scheduling (ICAPS)*, 2019. **Best Student Paper Award Winner**
- C2 **LEGO: Learning to Sample Robust Adaptive Roadmaps**, R. Kumar, A. Mandalika, S. Choudhury and S.S. Srinivasa. In *International Conference on Robotics and Automation (ICRA)*, 2019 (submitted).
- C3 **Bayesian Policy Optimization for Model Uncertainty**, G. Lee, B. Hou, A. Mandalika, J. Lee and S.S. Srinivasa. In *International Conference on Learning Representations (ICLR)*, 2019.
- C4 **Lazy Receding Horizon A* for Efficient Path Planning in Graphs with Expensive-to-Evaluate Edges**, A. Mandalika, O. Salzman and S.S. Srinivasa. In *International Conference on Automated Planning and Scheduling (ICAPS)*, 2018.
- C5 **Numerical and Experimental Implementation of Leapfrog Algorithm for Optimal Control of a Mobile Robot**, A. Vamsikrishna, Arun D. Mahindrakar and Shaligram Tiwary. In *International Control Conference (ICC)*, 2017.

- Workshops

- W1 **Sample-Efficient Learning of Nonprehensile Manipulation Policies via Physics-Based Informed State Distributions**, L. Pinto, A. Mandalika, B. Hou and S.S. Srinivasa. *Robotics Science and Systems (RSS)* 2019.

- Demonstrations

- D1 **Autonomous robot feeding for upper-extremity mobility impaired people: Integrating sensing, perception, learning, motion planning, and robot control**, T. Bhattacharjee, D. Gallenberger, D. Dubois, L. L'cuyer-Lapiere, Y. Kim, A. Mandalika, R. Scalise, R. Qu, H. Song, E. Gordon, and S.S. Srinivasa. In *Conference on Neural Information Processing Systems (NeurIPS)* 2018.

Teaching and Invited Talks

Graduate Teaching Assistant, University of Washington	Winter 2019
CSE571 Robotics: Algorithms and Applications	
Graduate Teaching Assistant, University of Washington	Fall 2017
CSE599 Advanced Robotics: Manipulation Algorithms	
Guest Lectures, Lakeside High School, Seattle	Fall 2017
Introduction to Robotics	

Mentoring

Andrey Ryabtsev	Spring 2019 - Present
Motion Planning: Benchmarking Framework	
Rahul Kumar Vernwal	Summer 2018
Learning Efficient Roadmaps for Robust Motion Planning	

Open Source Software Development Experience

Contributor to AIKIDO	2017 - Present
C++ library for solving robotic motion planning and decision making problems.	
Repository: https://github.com/personalrobotics/aikido	

Technical Skills

Languages: C, C++, Python, MATLAB, L^AT_EX

Libaries and Tools: ROS, OMPL, OpenCV