

Education

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| 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

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| 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. | |

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.

Academic Honors

- **Best Student Paper Award**

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**

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.

Teaching and Invited Talks

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

Mentoring

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

Open Source Software Development Experience

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

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| Languages: C, C++, Python, MATLAB, L ^A T _E X | Libraries and Tools: ROS, OMPL, OpenCV |
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