SIDHARTH TALIA

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EDUCATION

University of Washington, Seattle   2022 – 2027
Paul G. Allen School of Computer Science and Engineering   WA, USA
Ph.D. in Computer Science   GPA: 3.87/4.0

Guru Gobind Singh Indraprastha University, Delhi   2016 – 2020
Bharati Vidyapeeth College of Engineering   Delhi, India
B.Tech. in Electrical and Electronics Engineering   GPA: 8.81/10

EXPERIENCE

University of Washington, Seattle   Sep 2022 - Present
Graduate RA/TA, Advisor: Prof. Siddhartha S. Srinivasa   WA, USA

- Research in motion planning: Incremental Generalized Hybrid A* (RA-L 2025) and real-time kinodynamic planning for high-speed off-road autonomy.
- Develop and deploy robotic systems: H.O.U.N.D. (RSS 2024); Systems and integration expertise leveraged in L.R.N. and WheeledLab (CoRL 2025).
- Currently working on a Bi-manual system that leverages both planning and learning for industrial environments
- Teaching Assistant for CSE478: Autonomous Robotics (Spring '23–'25).

IIT Delhi   Jan 2022 – Jun 2022
Project Assistant, Advisor: Prof. Sunil Jha   Delhi, India

- Developed a lane-level localization pipeline combining learned lane detection with GPS–INS odometry.
- Work funded by TiHAN IIT Hyderabad.

University of Washington (remote)   Apr 2020 – 2022
Research Intern/Volunteer, Advisors: Prof. Christoforos Mavrogiannis, Prof. Siddhartha S. Srinivasa WA, USA

- Led development of a multi-robot non-prehensile manipulation system called PuSHR (IROS 2023).
- Implemented imitation-learning and RL pipelines for closed-loop control in simulation.

IIT Delhi   Jun 2019 – Jul 2020
Research Intern, Advisor: Prof. Sunil Jha   Delhi, India

- Led state estimation for an autonomous driving platform, integrating GPS–IMU–wheel odometry using Ardupilot; informed by prior work on multimodal localization (RDCAPE 2019).

Early Applied Robotics Projects/Internships   Jun 2016 – May 2019
Intern   Delhi, India

- (2019 Winter) Built and deployed visual odometry pipelines for high-altitude UAV navigation at Botlab Dynamics.
- (2018 Summer) Developed a low-cost (< $100) ADAS with V2V communication at IIT Delhi as part of the Celestini Project (India, 2018)
- (2016–2017) Implemented and deployed flight control systems for multi-rotor UAVs at Omnipresent RobotTech.

SKILLSET

- Languages: Python, C++, CUDA C++
- Frameworks / Libraries: PyTorch, ROS/ROS2, OpenCV, Ardupilot
- Robotics: Search-based planning, model predictive control, state estimation, sim-to-real
- Systems: GPU-accelerated algorithms, Embedded systems, real-time robotics stacks
- Hardware / CAD: System integration, Autodesk Fusion 360

PUBLICATIONS

Sidharth Talia, Oren Salzman, Siddhartha Srinivasa. "Incremental Generalized Hybrid A*." *IEEE Robotics and Automation Letters*, Nov 2025. Paper · Website.
— Anytime kinodynamic motion planning in continuous state spaces with expensive edge evaluations, demonstrated on a real robot with CUDA-accelerated rollout computation.

Matt Schmittle, Rohan Baijal, Nathan Hatch, Rosario Scalise, Mateo Guaman Castro, **Sidharth Talia**, Khimya Khetarpal, Byron Boots, Siddhartha Srinivasa. "Long Range Navigator (LRN): Extending Robot Planning Horizons Beyond Metric Maps." *CoRL 2025*. Paper · Video.
— Demonstrates long-range navigation via learned frontier affordances from camera input, validated on real robots.

Tyler Han, Preet Shah, Sidharth Rajagopal, Yanda Bao, Sanghun Jung, **Sidharth Talia**, Gabriel Guo, et al. "WheeledLab: Modern Sim2Real for Low-cost, Open-source Wheeled Robotics." *CoRL 2025*. Paper · Website.
— Explores sim-to-real transfer for low-cost wheeled robots, providing an open-source platform for reproducible robotics research.

Sidharth Talia, Matt Schmittle, Alexander Lambert, Alexander Spitzer, Christoforos Mavrogiannis, Siddhartha S. Srinivasa. "Demonstrating HOUND: A Low-cost Research Platform for High-speed Off-road Underactuated Nonholonomic Driving." *RSS 2024*. Paper · Website.
— Presents HOUND, a low-cost platform for high-speed off-road driving with underactuated, nonholonomic dynamics, enabling reproducible robotics experiments.

Sidharth Talia, Arnav Thareja, Christoforos Mavrogiannis, Matt Schmittle, Siddhartha S. Srinivasa. "PuSHR: A Multirobot System for Nonprehensile Rearrangement." *IROS 2023*. Paper · Code.
— Demonstrates PuSHR, a multirobot system for nonprehensile object rearrangement with coordinated planning and execution.

Sidharth Talia. "A Multimodal Approach for Localization of Ackermann-steering Micro Ground Vehicles in Poor GPS Environments." *RDCAPE 2019*. Paper · Code.
— Proposes a multimodal localization system combining IMU, camera, and wheel odometry for micro Ackermann-steering vehicles in challenging GPS conditions.

PROJECTS

- Low-cost research platform for aggressive offroad autonomy (HOUND)
- Multi-robot non-prehensile rearrangement system (PuSHR)
- Imitation and reinforcement learning with the MuSHR platform link
- Low-cost inertial navigation system link.