

EDUCATION

Northeastern University | Seattle, WA

Master of Science, Robotics

Expected May 2027

Osmania University | Hyderabad, India

Bachelor of Engineering, Computer Science and Engineering

July 2024

SKILLS AND CERTIFICATIONS

Programming Languages: Python, C, C++, XML/URDF

Robotics Frameworks: Robot Operating System (ROS/ROS2), MoveIt, Gazebo, RViz, Isaac Sim, Autoware

Design: SolidWorks, OnShape, Eagle PCB

Computer Vision: Object detection (YOLO, OpenCV), depth estimation, sensor fusion

OS & Tools: Linux, Git, GitHub, Docker

Sensors: LiDAR, IMU, encoders, Intel RealSense cameras, GPS/GNSS RTK

TECHNICAL EXPERIENCE

Northeastern University | Seattle, WA | Graduate Lab Assistant

April 2026 – Present

- Collected ROS2 bag data from a **Ford Mustang Mach-E** autonomous vehicle platform and ran visual SLAM (PySLAM) on recorded drives for trajectory analysis
- Configured UR12e URDF with Robotiq gripper integration, built full **MoveIt2 motion planning stack** for faculty research, and designed a custom end effector camera mount used across multiple research setups

Team Robocon MJCET | Hyderabad, India | Team Captain/Robotics Engineer

Dec 2020 – July 2025

- Led a **20+ member** robotics team to its **first national competition in 5 years**, designing advanced mobile robots across holonomic omni, mecanum, and swerve-drive platforms with custom ROS integration, waypoint navigation, and odometry
- Developed custom mechanisms for ball intake, shooting, arrow throwing, and ring manipulation, and designed PCBs integrating **10+ sensors and actuators** for real-time task automation under competition constraints
- Integrated LiDAR, encoders, IMUs, and cameras with ROS for autonomous behaviours, communication, and debugging across all competition platforms

Consciente Technologies | Hyderabad, India | Robotics Engineer - Intern

July 2022 – Sept 2022

- Computed DH parameters and configured MoveIt motion planning stack for a custom 5-DOF manipulator, and implemented a coordinate-based autonomous navigation system deployed on physical hardware

PROJECTS

Bimanual Deformable Garment Manipulation | [Video](#)

- Trained and evaluated ACT, Diffusion Policy, and smolVLA architectures on multi-garment folding tasks in a bimanual manipulation setting using Isaac Sim and LeRobot, with active sim-to-real transfer to a UR12e underway
- Achieved **60.4% overall success rate** across 4 garment categories, **peaking at 78%** on long top

Dynamic Bin Picking with Reactive Motion Replanning | [Video](#)

- Built a reactive replanning system for a UR12e with Robotiq Hand-E, using a RealSense D435i depth pipeline with workspace filtering, robot self-masking, and color-based body exclusion to isolate live obstacles in real time
- Exploits kinematic redundancy with a pool of **120 IK solutions**, planning up to 8 candidates via BITstar and RRTConnect fallback, replanning mid-execution in **1-3 seconds**

Kinematical Autonomous Legged Robot | [Drive](#)

- Designed and programmed a **12-axis quadruped** robot in ROS2 with locomotion modelled after MIT Cheetah, validated gait stability and autonomous navigation with SLAM in Gazebo
- Collecting locomotion and obstacle avoidance demonstrations for inverse reinforcement learning, targeting sim-to-real transfer on a Unitree Go2

Reactive Autonomous Navigation Stack | [Video](#)

- Built a modular nav stack from scratch with implemented global planners (A*, Theta*, SMAC) and local controllers (DWA), with RRT, Pure Pursuit, Stanley, TEB, and MPPI in active development
- Ported A*, SMAC, and DWA to C++ achieving **2-3x lower trajectory** rollout latency versus Python equivalent