SAIRAM SRIDHARAN

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Work Authorization: F-1 OPT; STEM OPT eligible (3 years total work authorization). No immediate sponsorship required.

EDUCATION

Northeastern University | Boston, MA **May 2026**

Masters of Robotics, Electrical and Computer Engineering, **GPA: 3.919**

Related Coursework: Reinforcement Learning, Robot Sensing and Navigation, Mobile Robotics, Robot Mechanics and Control, Field Robotics, Assistive Robotics, Optimization Algorithms, Non-Linear Controls.

Vellore Institute of Technology | Chennai **May 2024**

Bachelor of Technology, Mechatronics and Automation, **GPA: 9.12/10**

Related Coursework: Machine Learning, Neural Networks, System Integration, Industrial Automation, PLC, Computer Vision, IoT, Product Design and Development.

TECHNICAL SKILLS

Programming: Python, C++, Rust, MATLAB, SIMULINK

Software and Tools: ROS1/ROS2, Linux, Gazebo, MuJoCo, OpenCV, PyTorch, Docker, Git, SolidWorks, Raspberry Pi, GTSAM

Robotics & AI: Computer Vision, Machine Learning, Deep Learning, Reinforcement Learning, Neural Networks, SLAM, Visual-Inertial Odometry, Sensor Fusion, Path Planning, Motion Planning

PROJECTS

Fruit Yogurt Assembly Robot Using VLA | Physical AI Revolute Hackathon | VLA-Trained Manipulator

- Built a learning-based dessert assembly pipeline using a Seeed reBot B601-RS arm, LeRobot, and SmolVLA to perform four manipulation skills.
- Collected leader-follower teleoperation data from two cameras, fine-tuned skill specific VLA policies, and performed autonomous execution for fruit and yogurt scooping.

Structure-from-Motion (SfM) 3D Reconstruction Pipeline | Northeastern University | SfM 3D Reconstruction

- Built a complete SfM pipeline from scratch, including feature extraction, epipolar geometry, pose recovery, triangulation, PnP and global bundle adjustment using GTSAM.
- Validated reconstruction accuracy by comparing outputs with COLMAP and extracting real camera intrinsics (K) and radial distortion (k_1) from COLMAP calibration.

Adaptive Path-Guided RRT (APG-RRT) Implementation | Northeastern University | APG-RRT Path Planning

- Implemented and evaluated APG-RRT as an efficient alternative to RRT, generating smoother, shorter, and collision-free trajectories in structured environments (corridors, bends, narrow passages).
- Extended the algorithm from 2D Python simulations into a ROS 2 framework, integrating with TurtleBot3 in Gazebo to validate autonomous navigation in realistic robotic scenarios.

POMDP Navigation in MiniGrid using Reinforcement Learning | Northeastern University | RL - POMDP

- Developed navigation agents in partially observable environments using PPO, A2C, and POMCP, incorporating observation encoding and history-based state representations.
- Evaluated these approaches across multiple MiniGrid environments with varying complexity and stochasticity.

Clutch Fault Diagnosis using Deep Learning and WiSARD | VIT University | ML - Clutch Fault Diagnosis

- Evaluated multiple pre-trained CNNs for vibration-based clutch fault diagnosis using feature extraction, J48 feature selection, and WiSARD classification.
- Compared features extracted from AlexNet, GoogleNet, VGG16, ResNet-50, and DenseNet-201, evaluating their effectiveness for vibration-based fault diagnosis.

WORK EXPERIENCE

Research Intern | WIKA | Chennai **June 2022 - July 2022**

- Assisted the team in design and production of Industrial sensors, including flow, temperature, and pressure measurement devices.
- Contributed to calibrating Industrial sensors to maintain the accuracy and precision of pressure and temperature measurement instruments.

Research Intern | Lucas TVS | Chennai **May 2022 - June 2022**

- Monitored and supervised assembly lines for alternators, starters, motors, and wipers used in automotive applications, gaining practical experience in production workflows and process optimization.
- Worked with the R&D department to research product innovations and evaluate emerging technologies for future development.