

Shriman Raghav Srinivasan

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EDUCATION

Northeastern University

Boston, MA

Master of Science in Robotics; GPA: 3.78

September 2024 – August 2026

- Relevant Courses: Mobile Robotics, Robot Sensing & Navigation, Control Systems Engineering

SRM Institute of Science & Technology (SRMIST)

Chennai, India

Bachelor of Technology in Mechatronics Engineering; GPA: 3.81

June 2018 – May 2022

- Relevant Courses: Fundamentals of Robotics, Automation & Industrial Systems, Linear & Digital Control Systems

EXPERIENCE

Manufacturing Equipment Engineer Intern

April 2025 – December 2025

Tesla Inc.

Fremont, CA

- Led deployment of autonomous forklift AMRs integrated with Warehouse Management System (WMS), optimizing material flow and enabling \$2.04M projected annual cost savings through takt time reduction and improved throughput
- Designed penalty-optimized Theta* path planning system for internal fleet manager, reducing routing complexity by 83% and enabling real-time dynamic rerouting to minimize material handling delays
- Conducted time-motion studies and value stream mapping to identify bottlenecks in pallet handling operations, implementing AMR automation to reduce cycle time and improve overall equipment effectiveness (OEE)
- Owned DFMEA-driven reliability improvements for AGV fleet operations, targeting 35% reduction in unplanned downtime and improved mean time between failures (MTBF) for material handling equipment

Industrial Engineer – Projects

July 2022 – August 2024

Hero MotoCorp Ltd

Neemrana & Tirupati, India

- Integrated Autonomous Mobile Robots (AMRs) with Bidirectional RRT-based path planning, boosting material handling efficiency by 31.8% and reducing takt time by eliminating 14 hours of monthly production delays
- Achieved 32% increase in Just-In-Time (JIT) material loading efficiency through optimized AMR routing, ensuring on-time delivery to assembly stations and reducing work-in-progress (WIP) inventory
- Engineered zero-height pallet lifters optimizing ergonomic material flow, reducing pallet unloading time by 67% and tripling handling throughput while eliminating forklift traffic on production floor
- Maximized warehouse storage capacity by 50% through integration of ASRS-style rail-guided vehicles and multi-partition containers, improving space utilization by 13% and reducing picking time

PROJECTS

Improved LLM-A*: LLM Enhanced Cost Aware A* Path Planning

March 2025 – April 2025

- Redesigned LLM-A* hybrid path planning system, integrating LLM waypoint guidance with classical A* search to cut node expansions by 23.4% on 10x10 grids and 21.6% on 20x20 grids, delivering faster resource-efficient navigation for warehouse robotics
- Boosted waypoint accuracy by 17.8% through systematic comparison of chain-of-thought, minimalist, and Recursive Path Exploration (RePE) prompting methods for improved fleet routing decisions

3D Mapping for Warehouse Navigation using RTAB SLAM

October 2024 – November 2024

- Integrated RTAB-Map SLAM with ZED Mini Camera in ROS2 to enable drift-free localization for AMRs in GPS-denied warehouse environments, supporting autonomous navigation in dynamic material handling scenarios
- Combined stereo visual odometry and IMU data via Kalman filtering, achieving sub-centimeter accuracy and enhancing spatial awareness for AMR fleet coordination in complex warehouse layouts

Dead Reckoning Navigation with GPS/IMU Sensor Fusion

October 2024 – November 2024

- Built autonomous vehicle navigation stack fusing VectorNav IMU and GPS data, implementing magnetometer calibration for hard/soft-iron correction and complementary filtering for robust yaw estimation in material transport applications
- Achieved 2.3m positioning accuracy over 3km driving route through sensor fusion, validating dead reckoning performance for GPS-denied environment

TECHNICAL SKILLS

Technical: AMR Fleet Management, Path Planning (A*, RRT, Theta*), Material Flow Optimization, Just-In-Time (JIT) Delivery, SLAM, Sensor Fusion, Warehouse Management Systems (WMS), Multi-Robot Coordination

Programming: Python, C/C++, SQL, PLC-Ladder, MELFA-BASIC

Software: FlexSim, Siemens Tecnomatix, AutoCAD, MATLAB/Simulink, Gazebo, RViz2, Power BI, Git

Hardware: 2D/3D LiDAR, Stereo Cameras (ZED), RFID Systems, AMRs, Autonomous Forklifts, Conveyors, ASRS

Libraries/Framework: Kubernetes, Kafka, gRPC, GraphQL, Splunk, ROS 2, OpenCV, Scipy

Certifications: Deep Learning, Reinforcement Learning, Mechanism & Robot Kinematics, Systems Engineering