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 end-to-end pilot deployment of autonomous forklift (AMRs) from concept through test deployment, mapping factory environment, working with cross-functional stakeholders projected to deliver $1.54M in annual savings
- Developed RFQs and technical equipment specifications for in-house AMR development, evaluating vendor proposals and coordinating with procurement to ensure equipment met Tesla's material flow requirements and budget constraints
- Designed penalty-optimized Theta* path planning system for fleet manager, reducing routing complexity by 83% and enabling real-time dynamic remapping
- Owned DFMEA-driven reliability improvements for AGV operations, conducting data driven analysis to achieve 35% reduction in unplanned downtime and improved OEE

Industrial Engineer – Projects — July 2022 – August 2024
Hero MotoCorp Ltd — *Neemrana & Tirupati, India*
- Managed AMR integration project from requirements gathering through production handover, coordinating with vendors on technical specifications and leading installation team to boost material handling efficiency by 31.8%
- Developed detailed equipment specifications and documentation for conveyor systems, achieving 34% increase in JIT material loading efficiency while maintaining project timeline and budget targets
- Mentored 3 technicians on AMR operation and troubleshooting procedures, creating training documentation and SOPs to ensure successful production handover and sustained equipment performance
- Maximized warehouse storage capacity by 42% through integration of ASRS-style rail-guided vehicles, managing vendor relationships and coordinating installation schedules across multiple production areas

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 10×10 grids and 21.6% on 20×20 grids, delivering faster resource-efficient navigation for warehouse robotics
- Boosted waypoint accuracy by 17.8% through systematic comparison of chain-of-thought, minimalistic,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 warehouse zones and enabling reliable AMR localization

Technical Skills

Technical: AMR Fleet Management, Path Planning (A*, RRT, Theta*), Material Flow Optimization, ASRS, Conveyance Systems, SLAM, Sensor Fusion, Warehouse Management Systems (WMS), Multi-Robot Coordination
Project Management: RFQ Development, Technical Specifications, Vendor Coordination, Timeline & Budget Management, Cross-Functional Leadership, Production Handover, Documentation & SOPs
Software: FlexSim, Siemens Tecnomatix, AutoCAD, SolidWorks, MATLAB/Simulink, Gazebo, ROS 2, Power BI, Git
Hardware: 2D/3D LiDAR, Stereo Cameras (ZED), RFID Systems, AMRs, AGVs, Autonomous Forklifts, Conveyors, ASRS
Certifications: Deep Learning, Reinforcement Learning, Mechanism & Robot Kinematics, Systems Engineering