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: Robot Mechanics, Lean Methods, Control Systems Engineering, Mobile Robotics

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, Linear & Digital Control Systems, Automation & Industrial Systems

Experience

Manufacturing Equipment Engineer Intern April 2025 – December 2025
Tesla Inc. *Fremont, CA*
- Led end-to-end deployment of autonomous forklift AMRs on live factory floors, automating pallet handling operations and enabling $2.04M projected annual cost savings through labor optimization and improved material flow efficiency
- Engineered penalty-optimized Theta* path planning system for internal fleet manager, reducing manual routing process from 3.5 hours to 12 minutes (83% complexity reduction) and enabling dynamic rerouting
- Owned DFMEA-driven reliability improvements for AGV operations, resolving derailment and control instabilities through PID tuning, dynamic modeling, and RFID recalibration, targeting 35% reduction in unplanned fleet downtime
- Deployed RAG-based AI diagnostic agent integrated with factory maintenance systems, accelerating root-cause analysis and reducing equipment diagnostic response time by 17%

Robotics Engineer – Projects July 2022 – August 2024
Hero MotoCorp Ltd *Neemrana & Tirupati, India*
- Led deployment of ABB and Mitsubishi robotic arms for lithium-ion battery assembly, reducing cycle time by 12.4% and increasing production throughput by 84.6% while applying Lean principles to eliminate non-value-added tasks
- Integrated inclined roller conveyor with Allen Bradley PLC to balance material flow, resolve overloading issues, and improve throughput by 22%, ensuring consistent material handling across production lines
- Implemented TPM-driven predictive maintenance program using sensor analytics, reducing unplanned downtime by 21.4%, extending equipment lifespan by 33.6%, and saving $28,900 annually in maintenance costs
- Developed vision-guided defect detection system achieving 92.3% accuracy in assembly anomaly identification, reducing rework costs by $23,400 annually

Projects

3D Mapping for Manufacturing Floor Layout Planning using RTAB SLAM October 2024 – November 2024
- Integrated RTAB-Map SLAM with ZED Mini Camera in ROS2 to create high-precision 3D maps for manufacturing floor layout planning, enabling drift-free localization in GPS-denied warehouse environments
- Developed stereo visual odometry and IMU fusion system using Kalman filtering, improving spatial mapping accuracy for automated material handling systems and ensuring seamless navigation

GPS & IMU Sensor Fusion for Autonomous Material Transport September 2024 – November 2024
- Designed sensor fusion framework combining GPS and IMU data to enhance motion planning for autonomous material transport robots, increasing position accuracy by 17.2% and improving route optimization for JIT delivery
- Implemented real-time trajectory correction algorithms to mitigate IMU drift, reducing deviations by 15.8%, ensuring precise robotic operations and on-time material delivery to production lines

Maze-Solving Robot: MPC-Based Autonomous Navigation January 2025 – April 2025
- Developed MATLAB simulation framework for unicycle robot navigation using Model Predictive Control (MPC), achieving 23% lower tracking error compared to PID across 7 maze environments of varying complexity
- Implemented PRM-based path planning with receding horizon control, optimizing prediction and control horizons to minimize control effort while maintaining path accuracy for manufacturing AGV applications

Technical Skills

Technical: Manufacturing Process Optimization, Total Productive Maintenance (TPM), Lean Manufacturing, Six Sigma (DMAIC), DFM/DFA, SPC, DOE, PFMEA, Cycle Time Reduction, OEE Analysis
Programming: Python, C/C++, PLC-Ladder, MELFA-BASIC, VBA, SQL
Software: Robot Studio, RT Toolbox3, RSLogix 5000, TIA Portal, SolidWorks, AutoCAD, MATLAB, Power BI, SAP ERP
Hardware: ABB IRB Series, Mitsubishi RV/RH Series, Allen-Bradley ControlLogix, Siemens S7-1500, Cognex Vision, Conveyors
Libraries/Framework: ROS 2, OpenCV, TensorFlow, Pandas, Scipy
Certifications: Deep Learning, Mechanism & Robot Kinematics, Systems Engineering, CSWA-Additive Manufacturing