Shriman Raghav Srinivasan

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EDUCATION

Northeastern University — Boston, MA
Master of Science in Robotics; GPA: 3.78 — *September 2024 – August 2026*

SRM Institute of Science & Technology (SRMIST) — Chennai, India
Bachelor of Technology in Mechatronics Engineering; GPA: 3.81 — *June 2018 – May 2022*

EXPERIENCE

Manufacturing Equipment Engineer Intern — April 2025 – December 2025
Tesla Inc. — *Fremont, CA*

- Led deployment of autonomous forklift platforms integrating actuators, sensors, and structural assemblies, applying **DFM/DFA principles** to contribute to **$2.04M projected annual savings**
- Programmed and deployed AMR path planning using a **penalty-optimized Theta* algorithm** in internal fleet manager tool, enabling real-time dynamic rerouting and reducing routing complexity by **83%**
- Conducted **DFMEA** enhancements for AGV operations, addressing derailment root causes through PID tuning, vibration damping, and wheel-load modeling, targeting **35% downtime reduction**
- Designed powered retractable castor-wheel drivetrain for 2,000 lb dollies, streamlining fabrication/assembly and reducing manual handling effort by **23%**

Robotics & Manufacturing Engineer — July 2022 – August 2024
Hero MotoCorp Ltd — *Neemrana & Tirupati, India*

- Spearheaded deployment of ABB and Mitsubishi robotic arms for battery assembly, applying **Lean principles** to reduce cycle time by **12.4%** and save **$32,800 annually**
- Integrated Allen-Bradley PLC systems with roller conveyors, establishing **standard work** and **cycle time** documentation while improving throughput by **22%**
- Implemented **TPM-driven predictive maintenance**, reducing unplanned downtime by **21.4%**, extending equipment lifespan by **33.6%**, and saving **$28,900 annually**
- Developed vision-guided defect detection achieving **92.3% accuracy**, implementing **SPC standards** and reducing rework costs by **$23,400 annually** through **8D root cause analysis**

Industrial Engineering Intern — November 2018 – February 2019
Royal Enfield Motors Limited — *Chennai, India*

- Applied **Lean Six Sigma** methodologies to identify production bottlenecks, achieving **7% reduction in assembly time**; optimized material loading automation reducing waste by **5%**

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 A* search to cut node expansions by **23.4%** on 10x10 grids and **21.6%** on 20x20 grids
- Boosted waypoint accuracy by **17.8%** through systematic comparison of prompting methods, with RePE prompts generating the most actionable guidance

3D Reconstruction using RTAB SLAM — October 2024 – November 2024

- Integrated RTAB-Map SLAM with ZED Mini Camera in ROS2, using Bayesian loop closure and GTSAM optimization to create drift-free maps in GPS-denied environments
- Combined stereo visual odometry and IMU data via Kalman filtering, achieving sub-centimeter accuracy

GPS & IMU Sensor Fusion for Automotive Dead Reckoning — September 2024 – November 2024

- Developed Kalman-filtered GPS/IMU fusion system, increasing motion planning precision of RRT algorithm by **30%**
- Designed real-time trajectory correction algorithms to mitigate IMU noise, reducing deviations by **16%**

TECHNICAL SKILLS

Manufacturing: Lean Manufacturing, Six Sigma (DMAIC), TPM, DFM/DFA, Standard Work, Cycle Time/Takt Time, Ergonomics
Quality: SPC, DOE, 8D Problem Solving, PFMEA/DFMEA, Root Cause Analysis, Kaizen
Automation: PLC (Allen-Bradley, Siemens, Mitsubishi), HMI/SCADA, Robotic Arms (ABB, Fanuc, KUKA), Vision Systems
Software: SolidWorks, AutoCAD, MATLAB/Simulink, SAP ERP, MES, Robot Studio, Power BI, Python, C/C++, SQL
Certifications: SolidWorks Associate (CSWA), Mechanism & Robot Kinematics, Systems Engineering, ISO 50001 Auditor