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 & Control, Mobile Robotics, 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, Design of Mechatronics Systems

Experience

Manufacturing Equipment Engineer Intern April 2025 – December 2025
Tesla Inc. *Fremont, CA*
- Led deployment of autonomous forklift AMRs on live factory floors, developing application expertise in pallet handling automation and achieving $2.04M projected annual cost savings
- Created automated path-planning solution for internal AMR fleet manager, replacing 3.5-hour manual routing with optimized algorithm completing in 12 minutes, enabling customer-facing dynamic rerouting capabilities for 47 vehicles
- Developed RAG-based AI diagnostic agent providing context-aware troubleshooting support, reducing diagnostic response time by 17%—demonstrating customer support tool development
- Owned application-level DFMEA for AGV operations, systematically addressing customer-facing reliability issues through PID tuning and RFID recalibration

Robotics Engineer – Projects July 2022 – August 2024
Hero MotoCorp Ltd *Neemrana & Tirupati, India*
- Spearheaded installation and commissioning of ABB and Mitsubishi robotic arms for lithium-ion battery assembly application, programming vision-guided manipulation to reduce cycle time by 12%
- Developed MATLAB-based trajectory planning model for robotic arms, optimizing joint angles and path smoothness for welding applications, reducing weld defects by 10%
- Designed and built prototype for robotic welding tip cleaning application, teaching optimized trajectory using ABB Robot Studio, reducing weld melt issues by 27%
- Implemented vision-guided defect detection application using SegNet, achieving 92.3% accuracy and integrating with production line for real-time quality assurance

Projects

Improved LLM-A*: Automated Path Planning Application March 2025 – April 2025
- Developed path planning application integrating LLM waypoint guidance with classical A* search, cutting node expansions by 23.4% and demonstrating application development for robotic navigation
- Boosted waypoint accuracy by 17.8% through systematic comparison of prompting methods, creating reliable automated navigation guidance for fleet management applications

3D Mapping Application using RTAB SLAM October 2024 – November 2024
- Integrated RTAB-Map SLAM with ZED Mini Camera in ROS2, creating mapping application with Bayesian loop closure and GTSAM optimization for drift-free navigation in GPS-denied environments
- Developed stereo visual odometry and IMU fusion system via Kalman filtering, achieving sub-centimeter accuracy for autonomous robot navigation applications

Maze-Solving Robot: Controller Application Benchmarking January 2025 – April 2025
- Developed MATLAB simulation application comparing PID, LQR, MPC, and SMC controllers for mobile robot navigation, demonstrating systematic controller selection methodology for customer applications
- Implemented PRM-based path planning with automated performance metrics export, creating benchmarking framework applicable to robot application deployment and customer demonstrations

Technical Skills

Technical: Robot Programming (Teach Pendant, Offline), Application Development, Cell Integration, Customer Training, Technical Support, Process Optimization, Commissioning, Troubleshooting
Programming: Python, C/C++, RAPID (ABB), MELFA-BASIC (Mitsubishi), PLC-Ladder, VBA
Software: Robot Studio (ABB), RoboGuide (FANUC), RT Toolbox3 (Mitsubishi),MATLAB/Simulink, SolidWorks, AutoCAD
Hardware: ABB IRB Series, FANUC M-Series, Mitsubishi RV/RH, Universal Robots, Grippers, Vision Systems, Conveyors
Libraries/Framework: ROS 2, OpenCV, TensorFlow, Scipy
Certifications: Deep Learning, Mechanism & Robot Kinematics, Systems Engineering, CSWA-Additive Manufacturing