

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: Deep Learning for Robotics, Reinforcement Learning, Robot Sensing & Navigation

SRM Institute of Science & Technology (SRMIST)

Chennai, India

Bachelor of Technology in Mechatronics Engineering; GPA: 3.81

June 2018 – May 2022

- Relevant Courses: Computer Vision for Robotics, Fundamentals of Robotics, Linear & Digital Control Systems

EXPERIENCE

Manufacturing Equipment Engineer Intern

April 2025 – December 2025

Tesla Inc.

Fremont, CA

- Developed multi-camera pedestrian safety system using YOLOv8 for real-time object detection and Depth Anything V2 for monocular depth estimation, achieving 30 FPS multi-stream inference with μ s latency on edge compute
- Optimized deep learning inference pipeline for GPU utilization and frame-skipping, enabling efficient multi-camera processing while maintaining detection accuracy on NVIDIA Jetson platforms
- Developed RAG-based AI diagnostic agent using Large Language Models, integrating with factory maintenance systems for context-aware troubleshooting and reducing diagnostic response time by 17%
- Integrated 3D pallet vision system leveraging deep learning-based depth estimation for autonomous forklift pallet localization in warehouse environments

Robotics Engineer – Projects

July 2022 – August 2024

Hero MotoCorp Ltd

Neemrana & Tirupati, India

- Designed SegNet-powered vision-guided inspection system for lithium-ion battery assembly, achieving 92.3% accuracy in surface anomaly detection through semantic segmentation, reducing rework costs by \$23,400 annually
- Developed real-time spot-welding defect detection using Faster R-CNN optimized with TensorRT, achieving sub-50ms inference latency and reducing defect rates by 19.6%
- Engineered CRNN-based OCR pipeline for Vehicle Identification Number (VIN) recognition, combining CNN feature extraction with RNN sequential modeling for 86.7% accuracy in dynamic conditions

PROJECTS

LLM-Enhanced Path Planning with Neural Guidance

March 2025 – April 2025

- Integrated Large Language Model (transformer-based neural network) guidance with classical A* path planning, using LLM-generated waypoints to improve search efficiency by 23.4% and reduce computation time by 31%
- Boosted waypoint accuracy by 17.8% through systematic comparison of chain-of-thought, minimalistic, and Recursive Path Exploration prompting methods, achieving 94% valid path generation rate

Deep Neural Network Feature Extraction for Visual SLAM

October 2024 – November 2024

- Combined deep neural network feature extraction with SLAM pipeline, training custom visual descriptor models achieving 12% reduction in localization drift across challenging visual environments
- Integrated RTAB-Map SLAM with stereo vision and IMU fusion via Kalman filtering, achieving sub-centimeter accuracy (0.8cm mean error) in GPS-denied environments through learned visual features

Dead Reckoning with Sensor Fusion

October 2024 – November 2024

- Built automotive navigation stack fusing VectorNav IMU and GPS data, implementing complementary filter combining magnetometer and gyroscope for robust heading estimation with 18% accuracy improvement
- Developed forward velocity estimation from accelerometer data with neural network-based bias correction, validating dead reckoning achieving 2.3m accuracy over 3km driving route (0.08% error rate)

TECHNICAL SKILLS

Technical: Neural Network Architectures (CNN, RNN, Transformer), Object Detection (YOLO, Faster R-CNN), Semantic Segmentation (SegNet, U-Net), Model Training & Optimization (TensorRT, ONNX), LSTM, Depth Estimation, LLM/RAG

Programming: Python, C/C++, CUDA, SQL

Software: MATLAB, Gazebo, Isaac Sim, Weights & Biases, MLflow, Docker, Git

Hardware: NVIDIA Jetson Orin/Xavier, GPU Workstations (RTX), Industrial Cameras, Depth Cameras, LiDAR

Libraries/Framework: PyTorch, TensorFlow, TensorRT, ONNX, OpenCV, torchvision, Ultralytics, Hugging Face Transformers, ROS 2

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