SHRAVAN SHENOY

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EDUCATION

University of Southern California — Los Angeles, California
Master of Science in Computer Science — January 2025-December 2026

- Completed Web Technologies, Analysis of Algorithms courses and Database Systems with a GPA of 3.65 (on a scale of 4)

R.V. College of Engineering — Bangalore, India
Bachelor of Engineering (B.E.) — August 2020-May 2024

- B.E. in Computer Science Engineering (CSE). Enrolled in 2020 and graduated in 2024 with a GPA of 9.05 (on a scale of 10)

EXPERIENCE

Dynamic Robots and Controls Laboratory, University of Southern California (USC) — Los Angeles, California
Research Engineer — February 2025-Present

- Engineered a vision-language segmentation pipeline using SAM2 and fallback detection via OWL-ViT, enabling robust object tracking and key point generation for bipedal robot soccer.
- Benchmarked performance and stability of multiple segmentation models (image encoders and mask decoders), analyzing mask accuracy and inference speed on edge devices (Jetson Orin Nano).
- Prototyped a modular evaluation pipeline for segmentation consistency and drift handling, using post-processing heuristics and Kalman filtering to improve stability across frames.
- Training a velocity-control policy in Isaac Lab to enable the Unitree Go1 robot to track velocity commands on flat terrain using reinforcement learning (rsl-rl) in IsaacSim.

Netradyne Technologies Pvt. Ltd — Bangalore, India
Software Developer Intern — February 2024-November 2024

- Built an edge infrastructure and diagnostics pipeline for 10,000+ devices, with real-time CPU/GPU metrics and dynamic graphs for debugging field systems.
- Developed roadmap for a large language model (LLM)-based Root Cause Analysis system, combining preference signals, log analysis, and thresholding for failure mode classification across fleet-wide devices.
- Collaborated across QA, backend, and DevOps teams to deploy tools with measurable impact on debugging latency and device uptime.

Robotics Innovations Lab, Indian Institute of Science (IISc) — Bangalore, India
Research Intern — April 2023-December 2023

- Researched vision-based human–robot collaboration (HRC) for safe motion planning, implementing gesture-based interaction, pose estimation, and static safety zone segmentation, evaluated against RRT and GDA baselines.
- Developed a teleoperation-driven trajectory planning framework using multi-objective convex optimization to balance productivity and safety, applying analytical methods to model human intent and spatial constraints.
- **Publication**: Paper accepted for publication in Robotica (Q1) Journal (doi:10.1017/S0263574725000323)

ACADEMIC PROJECTS

Humanoid Robot Vision Stack (USC Dynamic Robots & Controls Lab)

- Building a camera–IMU state estimation pipeline using the Intel RealSense D265i for reliable humanoid pose tracking.
- Will extend the stack with lightweight modules for depth-based local obstacle mapping (TSDF/ESDF or 2D costmaps) and goal-to-trajectory generation, designed as a baseline framework for other researchers.

Lung Cancer Metastasis Prediction Using Ensemble Learning

- Predicted metastasis probability and life span using AdaBoost, Gradient Boosting Classifier, and Random Forest on the SEER database
- Focused on utilizing textual data for impactful healthcare predictions

Robothon E-Waste Segregation Challenge 2023 (TU Munich)

- Programmed a 6-DOF robotic manipulator system for autonomous e-waste segregation on a custom platform, achieving 9th place overall by completing 4 out of 6 tasks successfully.
- Integrated a YOLO-based computer vision pipeline using a RealSense camera for real-time object detection and task categorization

Personal Recruiter Q/A Chatbot

- Built an intelligent AI chatbot leveraging vector embeddings (ChromaDB) and NLP to create a dynamic, searchable knowledge base of professional experiences and skills.
- Integrated multi-format document processing (PDF, DOCX, CSV, images with OCR) to extract and contextualize achievements, technical expertise, and impact metrics.

- Developed semantic search and temporal context management for accurate, up-to-date professional representation.
- Integrated Google Gemini for natural language understanding to enable real-time recruiter Q&A and automated, data-grounded resume tailoring.

SKILLS

Languages: Python, C++
Frameworks & Tools: PyTorch, TensorRT, ONNX, OpenCV, ROS, Git, Pandas, IsaacSim
ML Topics: Vision-Language Models, Transformer-based Models (OWL-ViT), LLM-based Pipelines, Kalman Filtering, Data Analytics

HONORS & AWARDS

- ICRA Metrics Adapt Challenge 2023 (Similar to Robothon) - 1st place overall
- Australs International Parliamentary Debate 2022 - 14th place overall
- School Prefect (Student Leader) at National Public School, 2019