ANIRUDH RAGHAVAN

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Autonomy graduate student seeking internship or co-op opportunities to apply and grow skills in autonomy, AI, and computer vision with hands-on experience in building real-time perception systems and deep learning pipelines for autonomous platforms. Proven ability to enhance object detection under complex conditions using adaptive preprocessing and domain-specific augmentation.

EDUCATION

Purdue University, *West Lafayette, IN, USA* - *MSE in Autonomy* (Candidate 2026) **(GPA: 3.72 / 4)** 2024 – Present

- **Coursework:** Vehicular Cyber-Physical Systems, Embedded Systems, Autonomous Systems, Artificial Intelligence

Vellore Institute of Technology, *Chennai, India* - *B.Tech- Electronics and Communication Engineering* **(GPA: 8.11 / 10)** 2020 – 2024

- **Coursework:** Robotics and Automation, Machine Learning Fundamentals, Control Systems

SKILLS

- **Technical Areas:** Computer Vision, IoT, Embedded Systems, Control Systems, Perception, Real-Time Processing
- **Languages, Tools & Frameworks:** Python, C++, ROS2, Gazebo, Arduino IDE, OpenCV, YOLO, TensorFlow, PyTorch
- **Hardware:** Arduino UNO/Nano, ESP8266, ESP32, STM32, NVIDIA Jetson Nano
- **Certification:** Python for Everybody, IBM AI Engineering Specialization, Modern Robotics Course 1: Foundations of Robot Model

EXPERIENCE

Internet of Things, Externship *(Remote from Chennai, India) — SmartInternz*, Hyderabad, India May 2023 – Jul 2023

- Designed and deployed WePark, a smart parking system using ESP32 and IBM Cloud for real-time slot tracking and mobile reservations. Achieved 98% detection accuracy, reducing false availability by 85% through calibrated sensors. Built cloud backend with Firebase and Node-RED, supporting concurrent users with near-zero latency. | GitHub

PART-TIME EXPERIENCE

Student Barista - *Aramark at Purdue University – Starbucks* – West Lafayette, IN , USA Feb 2025 – Present

- Developed soft skills in communication, multitasking, and customer interaction under high-pressure service environments while maintaining academic performance.

PUBLICATION

1. Abhishek Sebastian, R. Pragna, K. Vishal Vythianathan, Dasaraju Sohan Sai, U. Shiva Sri Hari Al, **R. Anirudh**, Apurv Choudhary; Design of rubble analyzer probe using ML for earthquake. AIP Conf. Proc. 9 November 2023; 2946 (1): 040003. | Link

ACADEMIC PROJECTS

Exploring Object Detection And Semantic Segmentation On Road Scene Dataset | GitHub Jan 2025 – May 2025

- Developed and evaluated YOLOv8 and U-Net models for road scene understanding using a custom Waymo-based dataset.
- Created an extensible pipeline for multi-task vision benchmarking, achieved 79% IoU on segmentation and 65% mAP on detection

Weather-Invariant Object Detection: Enhancing YOLOv8 with Environment Adaptive Preprocessing for Robust Performance Across Diverse Conditions | GitHub Aug 2024 – Dec 2024

- Developed a modular, scalable pipeline seamlessly integrating weather classification, adaptive image enhancement, and YOLOv8 for robust real-time object detection in adverse weather conditions.
- Achieved 93% mAP across synthetic fog, rain, and low-light datasets; reduced false negatives by 27% using targeted augmentations

Traffic Sign Recognition Using Deep Learning and Tkinter | GitHub Jun 2025 – July 2025

- Built a high-accuracy traffic sign recognition system using Convolutional Neural Networks (CNNs) trained on the GTSRB dataset in TensorFlow and achieved 99.2% accuracy on test set.
- Deployed the model using a custom Tkinter GUI to enable real-time image classification for potential in-vehicle applications.