

# GOPICHAND GURUVIGALLA

Computer Vision & Edge AI Engineer

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## ABOUT ME

Trainee Engineer specializing in Computer Vision and Edge AI deployment. Skilled in building real-time object detection pipelines, preparing and augmenting datasets, and training YOLO (v5, v8, v11) models using PyTorch. Experienced in RTSP-based video inference, frame extraction, and performance optimization. Proficient in containerizing and deploying AI applications with Docker and Docker Compose on NVIDIA Jetson (ARM) and x86 GPU platforms.

## WORK EXPERIENCE

Bharat Electronics Limited

Jul,2024 - Present

### Trainee Engineer

- Built real-time video inference pipeline using **YOLO** models on **RTSP** camera streams with low latency.
- Captured and processed frames from live streams to generate structured datasets for **model retraining**.
- **Preprocessed** and **augmented** datasets in YOLO format to improve model stability and accuracy.
- Trained and fine-tuned **YOLOv5**, **YOLOv8**, **YOLOv11** models on custom datasets using **PyTorch**.
- Evaluated models using **mAP**, **precision**, **recall** metrics and optimized for deployment performance.
- Created **Docker images** for backend, frontend, PostgreSQL, and AI inference services.
- Designed and managed **Docker Compose** stacks with environment configuration, port exposure, and volumes.
- Deployed AI workloads on NVIDIA **Jetson** devices and GPU servers using **multi-arch** compatible containers.

## PROJECTS: REAL-TIME OBJECT DETECTION AND EDGE AI DEPLOYMENT SYSTEM

Tech Stack: Python, PyTorch, YOLOv5/YOLOv8/YOLOv11, OpenCV, RTSP, Docker , Docker Compose,

- Built a real-time object detection pipeline using YOLO models on live RTSP camera streams.
- Prepared and augmented datasets in YOLO format and trained YOLOv5/YOLOv8/YOLOv11 models using PyTorch.
- Performed containerization of the complete AI system for deployment across environments.
- Deployed the application on NVIDIA Jetson (ARM) and x86 GPU platforms using multi-architecture builds.

## TECHNICAL SKILLS

**Computer Vision:** YOLOv5, YOLOv8, YOLOv11, PyTorch, OpenCV

**Pipelines:** RTSP, Real-Time Video Inference, Frame Extraction

**ML Workflow:** Dataset labeling, augmentation, hyperparameter tuning

**Deployment:** Docker, Docker Compose, Multi-Arch Builds,

**Platforms:** NVIDIA GPU, Jetson Nano

**Programming Languages:** Python, C++

## EDUCATION

Bachelor of Technology (CSE)

2023

Rajeev Gandhi Memorial College of Engineering and Technology

8.4 CGPA