

Rohan Sada

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ACADEMIC QUALIFICATION

Masters in Electrical and Computer Engineering
Rutgers University – New Brunswick, USA
Current GPA: 3.8/4.0

B.Tech in Electrical and Computer Engineering
PES University, Bengaluru, India
Aggregate/CGPA: 8.11/10

WORK EXPERIENCE

Computer Vision Engineer, AllGoVision Technologies, Bengaluru, India

Jun'22 – Apr'24

- Designed and deployed a multi-camera tracking pipeline with multi-threading and concurrency, scaling across 20+ cameras.
- Implemented Kalman filters for trajectory prediction, improving cross-camera object tracking and re-identification with high accuracy.
- Developed spatio-temporal matching algorithms enabling real-time person re-ID across distributed camera networks.
- Accelerated inference with NVIDIA TensorRT, cutting model runtime by 30%, enabling real-time analytics at production scale.
- Recognized with AllGoVision Excellence Award for technical contributions to the Multi-Camera Tracking (MCT) project.

INTERNSHIPS

Research Intern (CityOS), WINLAB, Rutgers University, New Jersey, USA

May'25 – Aug'25

- Built a YOLO-based parking occupancy classifier with an automated video-to-training pipeline, processing 10K+ hours of video for dataset generation.
- Developed a neural network predictor for parking availability with 90% forecast accuracy.
- Integrated predictor into an interactive UI (real-time map + predictor), improving visualization of urban mobility data.

**Student Intern, Centre of Air Borne Systems, Defense Research and Development Organization,
Govt. of India, Bengaluru**

Oct'21 – Dec'21

- Real-Time EO/IR Fusion: Built a thermal + visible video fusion system for airborne cameras, enhancing visibility and situational awareness.
- Multi-Sensor alignment: Applied OpenCV image registration for precise pixel mapping and field of view alignment across sensors.
- Deep Learning Fusion Model: Designed an encoder-decoder model for efficient image fusion, optimized with TensorRT and deployed for real-time fusion on NVIDIA Jetson Nano.
- Embedded Integration: Achieved around 10 FPS real-time performance on Jetson Nano through optimized low-level processing.

ACADEMIC PROJECTS

Semantic SLAM and 3D Scene Understanding

- Architected a 3D perception pipeline integrating YOLO and Depth Anything models to reconstruct 3D object point clouds from monocular cameras.
- Integrated ORB-SLAM3 to map these local semantic observations into a consistent global coordinate system.
- Developed a custom semantic 3D tracker to track objects in 3D with the help of KD-Tree neighbor search for data association.
- Orchestrated a parallelized multi-process architecture (Camera, SLAM, Object Detection) using Python multiprocessing.

Distributed BLIP-2 Fine Tuning:

- Fine-tuned BLIP-2 on medical data using PyTorch FSDP and DeepSpeed on 16 A100 GPUs.
- Reduced memory usage by 34% and achieved 10.7x throughput speedup with efficient parameter sharding and mixed precision training.

PUBLICATIONS

- R. Sada, D. T. M and R. Rajesh, "Deep Learning Based Real-Time Fusion of Day and Thermal Videos," 2022 IEEE Region 10 Symposium (TENSYP), Mumbai, India, 2022, pp. 1-6, doi: 10.1109/TENSYP54529.2022.9864438.

TECHNICAL SKILLS

Skills: Computer Vision, Spatial AI, 3D Perception.
DL Libraries: OpenCV, TensorFlow, PyTorch, TensorRT, OpenVINO

Languages: Python, C, C++, JavaScript, MATLAB
Technical Tools: Git, Docker, Linux, Cadence
