Nithin Sai Kumar Kopparapu

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PROFESSIONAL SUMMARY

Master's (M2) student in Machine Vision and Artificial Intelligence at Université Paris-Saclay. Experienced in developing CNNs, Vision-Language Models (VLMs), and Object Detection systems using PyTorch and OpenCV. Proven ability to combine advanced AI research with practical deployment skills. Seeking AI/ML roles to solve complex visual processing and predictive modeling challenges.

EDUCATION

Université Paris-Saclay — *France*
Master M2 - Machine Vision and Artificial Intelligence — *Sep 2025 – Present*

Université Paris-Saclay — *France*
Master M1 - Electrical Engineering (CGPA: 12.38/20) — *Sep 2024 – Jun 2025*

Amrita Vishwa Vidyapeetham — *Chennai, India*
B.Tech in Electronics and Communication Engineering (CGPA: 7.21/10) — *Jul 2019 – Jul 2023*

PROFESSIONAL EXPERIENCE

Saint-Gobain Research Provence — *France*
Computer Vision and AI Intern — *Mar 2026 – Present*
- Researching advanced image processing and Computer Vision algorithms to monitor clogging in industrial glass furnaces.
- Developing and optimizing image segmentation pipelines to extract actionable insights from high-temperature visual data.

Mavenir Systems — *Bengaluru, India*
Graduate Engineer & 5G System Testing Intern — *Jan 2023 – Aug 2024*
- Executed 5G/4G RAN and Platform deployments, specializing in complex cluster installations via Kubernetes, Docker, and RHOCP.
- Conducted comprehensive GNB/Enodeb sanity and performance testing in large-scale telecom environments.

SELECTED AI & VISION PROJECTS

Mitigating Hallucination in Compact VLMs | *PyTorch, QLoRA, SmolVLM2* — *Feb 2026*
- Engineered a custom adversarial dataset ("Yin-Yang") to address the sycophancy trap in 2.2B parameter Vision-Language Models.
- Implemented Chain-of-Thought (CoT) prompting and Supervised Fine-Tuning (SFT) using QLoRA, reducing hallucination rates from 93.75% to 21.88% while retaining 96.88% of original visual utility.

Synthetic Data Generation using GANs | *TensorFlow, Generative AI* — *Feb 2025 – Jun 2025*
- Designed and trained a Generative Adversarial Network (GAN) to generate high-fidelity synthetic image data, effectively augmenting training datasets to improve downstream classifier robustness.

UAV Vehicle Detection & Speed Estimation | *YOLOv11, Transfer Learning* — *Feb 2025 – Jun 2025*
- Developed an innovative UAV-based visual signaling system to prevent vehicle collisions at intersections, leveraging YOLOv11 and transfer learning for real-time object detection and trajectory estimation.

Edge AI Traffic Detection & Hand Gesture Recognition | *Jetson Nano, YOLOv4* — *Jan 2022 – Dec 2022*
- Trained YOLOv4-tiny models using transfer learning and successfully deployed them onto resource-constrained Edge AI modules (Nvidia Jetson) for real-time video stream classification.

TECHNICAL SKILLS

- **AI/ML & Vision:** Deep Learning, CNNs, Generative AI (GANs, VLMs), Transfer Learning, Object Detection (YOLO), Segmentation.
- **Programming:** Python (NumPy, Pandas, Scikit-learn), MATLAB.
- **Frameworks & Libraries:** PyTorch, TensorFlow, Keras, OpenCV, Hugging Face Transformers, PEFT.
- **MLOps & Cloud:** Kubernetes, Docker, HELM, Linux, Prometheus, Git.
- **Languages:** English (Fluent / C2), French (Beginner / A1).

PUBLICATIONS & ACHIEVEMENTS

- **Publication:** *Measuring Vehicle-in-Motion, Density and Allocation of Traffic Signal using Transfer Learning*, 3rd ICAIKP Conf., 2023.
- **Publication:** *Detecting and Classifying Vehicles in Traffic Signal Using Transfer Learning*, 2nd ICSDP Conf., 2022.
- **Awards:** Winner, Arcanum Image Processing Competition (Mar 2022) | Semi-finalist, STMicroelectronics Inventors Challenge.
- **Hackathon:** Built a Facebook integration with Le-Chat during the Mistral AI MCP Hackathon.