Aman Upganlawar

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EDUCATION

Columbia University — New York, NY
M.S. in Computer Science (ML Track), GPA: – — *Aug 2025 – Dec 2026*
- Relevant Courses: Intro to Databases, Machine Learning, NLP, DL for CV, CV 1

Pune Institute of Computer Technology — Pune, India
B.E. in Computer Engineering, Hons. in AI/ML, CGPA: 8.70/10 (3.85/4) — *Dec 2021 – Jun 2025*
- Relevant Courses: DL, AI, ML, NLP, Pattern Recognition, Engineering Mathematics

TECHNICAL SKILLS

Languages: Python, C++, SQL
Frameworks: TensorFlow, PyTorch
Databases: SQL, MongoDB
Tools: GitHub, AWS, Roboflow, NVIDIA Omniverse

PROFESSIONAL EXPERIENCE

Computer Vision Intern — Remote
ARGenie Inc. — *Feb 2025 – May 2025*
- Created a synthetic dataset of 1,500+ factory assembly line images using NVIDIA Omniverse Replicator with 22 engine components on real industrial backgrounds; trained YOLOv10 achieving 99% mAP.
- Annotated and processed 400+ engine bay images to fine-tune a ResNet regression model for coolant tank fill level prediction.

Assistant Research Fellow — Hyderabad, India
CVIT Lab, IIIT Hyderabad — *Mar 2024 – Sep 2024*
- Researched glare and reflection removal for in-vehicle dashcam videos using deformable convolutions on a custom dataset of 35,000+ paired images.
- Handled perspective shift between paired images and frame rate with scripting and advanced digital image processing techniques.

Deep Learning Intern (Computer Vision) — Pune, India
Pune Institute of Computer Technology — *Feb 2024 – Mar 2024*
- Tested 15+ SoTA models on Image Restoration(IR) tasks in custom environment. Implemented Dehazenet and Multi Stage Progressive (MPRNet) for dehazing, deblurring, deraining, and super-resolution on a custom database.

Internship Trainee — Pune, India
UST Global — *Dec 2023 – Jan 2024*
- Built a real-time attendance monitoring system with DL–based face recognition (Dlib & Facenet via DeepFace). Performed Quantization-aware training (QAT) for efficient deployment on Raspberry Pi 4.
- Integrated MongoDB for data storage, achieving 99.2% accuracy and designed a confidence scoring algorithm for dynamic model reliability.

Junior ML Engineer — Remote
Omdena — *Dec 2023 – Feb 2024*
- Developed YOLOv8-based license plate detection system for illegal deforestation project in Romania. Detected number of wooden logs in the back of moving trucks with precision 0.956, recall 0.977, and mAP@50 of 0.991.

PUBLICATIONS

A Survey on Urbanization Detection Using Deep Learning and Explainable AI – ICARS 2025 (Accepted)

Identification of Food Deserts in Brooklyn Using GIS and ML Techniques – ICACTEA 2025 (Accepted)

Evaluating Clustering of GAN-Generated Medical Images Using Custom and Pre-trained CNN Architectures to Identify GAN Fingerprints: – CEUR 2024

PROJECTS

Urban Change Detection with Remote Sensing and Explainability
PyTorch, Transformers, Streamlit, GradCAM, OpenCV, NumPy, scikit-image
- Improved and implemented a Transformer-based Siamese Network (ChangeFormer) for urban change detection in satellite imagery on a custom dataset built for Pune city.
- Integrated explainable AI (XAI) using GradCAM within a Streamlit web application, enabling visual interpretation of model predictions and identifying key regions of change.

Paper Implementations
Deep Learning, Computer Vision, Generative Models, PyTorch
- Read and understood several architectures like Pix2Pix, ESRGAN, U-Net, ResNet, and implemented them independently in PyTorch.