# Roubish Kumar Pushkar

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## Professional Summary

AI Engineer — 4+ Years Experience Expert in Machine Learning, Deep Learning, and Data Science. Proficient in Python, software development, OOP, and functional programming. Passionate about AI innovation and leading end-to-end AI solutions in logistics, security, and transportation.

## Skills

Python, TensorFlow, PyTorch, OCR, CNNs, ANN, Object Detection, Semantic Segmentation, Image Classification, Deep Learning, Software Development, NVIDIA Jetson, Edge AI, DeepStream SDK, C++, OpenCV, YOLO, SSD, Computer Vision, MySQL/NoSQL, GCP, GCF, AWS, FFmpeg, GitHub, Docker.

## Experience

**Assert AI** *Bengaluru, India*
**Responsibilities** *September 2021 – Present*
*Deployment of Large-Scale Computer Vision Projects (Ongoing).*

- Code Development: Design and implement scalable computer vision solutions, collaborating with teams to meet project requirements.
- Model Training Optimization: Select, train, and fine-tune computer vision models (CNNs, YOLO, SSD) for high accuracy and efficiency.
- Software Maintenance: Maintain, debug, and enhance vision-based applications for reliability and adaptability.
- Hardware Debugging: Diagnose and optimize edge devices (NVIDIA Jetson, GPU/CPU, memory, power, connectivity) for stable operations.
- PoC Development: Create and test innovative Proof of Concepts (PoCs) to solve real-world AI and computer vision challenges.

## Projects

**Automatic Number Plate Recognition Project**

- Designed and developed an end-to-end ANPR system by integrating PaddleOCR with DeepStream for real-time license plate detection.
- Optimized accuracy and reduced processing time, ensuring efficient recognition in various lighting and weather conditions.
- Conducted comprehensive testing and debugging for seamless deployment in real-world environments.

**Turnaround Time Project - Person Waiting Time Measurement**

- Implemented video analytics using DeepStream Python to measure customer waiting and service times at retail stores.
- Provided data-driven insights to optimize workflow efficiency and enhance customer experience.
- Designed a scalable and automated monitoring system for continuous improvement in service management.

**Real-Time Warehouse Surveillance Monitoring**

- Developed custom AI models to monitor warehouse operations, including shutter status tracking and sack counting for logistics efficiency.
- Implemented vehicle entry monitoring, person intrusion detection (especially at night), and guard attendance tracking to enhance warehouse security.
- Integrated real-time alerts and visual dashboards to provide actionable insights for warehouse management.

**Industrial safety and surveillance**

- Designed AI-powered safety solutions to detect helmet and vest violations, hand glove violations, forklift overspeeding, and illegal vehicle parking.
- Developed fire and smoke detection algorithms for early hazard identification and prevention.
- Deployed edge-based models on NVIDIA Jetson devices for real-time processing, ensuring workplace compliance and accident prevention.

**Mumbai Metro AI Surveillance – Padecco India**

- Deployed AI-based surveillance across 80 metro stations (15–20 cameras each) to analyze crowd and queue behavior using 7 days of video data per camera.
- Use Cases: Gender detection (YOLOv8), head count, queue length monitoring, and peak-hour crowd analysis.
- Optimization: Used DeepStream 6.1.1/6.2 and NVIDIA GPUs (A6000, RTX 4090/3090) for high-speed batch inference.
- Automation: Created shell scripts to handle video conversion, inference, and report generation.
- Reporting: Converted videos to MP4 using FFmpeg; stored and analyzed results in Excel format.
- Teamwork: Worked in an 8-member core team with 2 support members to deliver the full pipeline.
- Tools Tech: YOLOv5 CrowdHuman, YOLOv8s, OpenCV, DeepStream, GStreamer, Linux, Pandas, FFmpeg.

## Educational Qualifications

**MCA** *Jun 2017 - Mar 2021*
*REVA UNIVERSITY, Bengaluru*