

Meet Pandya

AI Engineer | Computer Vision Engineer

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Summary

AI & Computer Vision Engineer with 4 years of experience building scalable systems in Python, C++, and CUDA. Delivered measurable improvements across scanning/perception pipelines (e.g., up to 30% latency reduction) and production utilities for calibration, synchronization, and deployment. Exploring Generative AI/LLMs through applied personal research.

Experience

Vehant Technologies Pvt. Ltd.

Jun 2021 – Present

Lead Computer Vision Engineer | DepScan Under-Vehicle Scanning System

- Optimized shift detection and mosaic generation, improving sharpness and reducing generation latency by **30%**.
- Integrated stereo camera calibration and rectification into production pipelines with **sub-pixel** reprojection error.
- Integrated deep-learning feature detection and matching to enable car model classification and improve reference identification by **20%**.
- Upgraded image registration and depth alignment for change detection, increasing anomaly detection rate by **10%**.
- Improved depth estimation and point cloud refinement, reducing depth error to **1% of operating range**.
- Built an incremental **few-shot** vehicle classifier; achieved **90%** detection on new categories using **10 samples**.
- Reduced false positives via a one-class anomaly detector (**-25%**) and SAM-based background removal (**-15%**).
- Improved OOD accuracy using domain adaptation (**+15%**) and fine-tuned monocular depth models (**-20%** absolute depth error).
- Created synthetic data generation in Blender by simulating **8 cameras** for multi-view vehicle imagery, reducing prototyping cost.
- Delivered deployment utilities: automated calibration tool (**3×** less engineering effort), framework-agnostic Python inference server (**5×** faster deployment), and camera synchronization optimization (**1%** sync error).

DA-IICT

Aug 2019 – May 2021

Teaching Assistant (Computer Architecture, Linux Systems)

- Assisted with labs, evaluations, and student mentoring for core CS systems courses.

Education

M.Tech., Software Systems

DA-IICT, 2019–2021

B.Tech., Computer Engineering

Ganpat University, 2015–2019

Certifications & Workshops

Deep Learning Specialization (DeepLearning.AI, Coursera) | Data Science Specialization (IBM, Coursera) | Summer School of AI (CV-IT, IIT Hyderabad)

Publications

DepScan: 3D Under Vehicle Scanning System — AIML Systems (2023)

Segregating and Recognizing Human Actions from Video Footages Using LRCN Technique — AMLTA (2020)

Skills

Programming: Python, C++, SQL, Shell Scripting, CUDA

Libraries/Frameworks: PyTorch, OpenCV, NumPy, Pandas

Core Areas: Computer Vision, Image Processing, Image Registration, Stereo Calibration, Depth Estimation, Point Clouds, Anomaly Detection, Synthetic Data, Domain Adaptation, Model Deployment