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Profile Summary

Dedicated Senior AI Engineer with 5+ years of experience in AI, ML, computer vision, and IoT. Proven expertise in deploying scalable, optimized solutions across industries such as petroleum, manufacturing, and telecommunications. Passionate about continuous learning and driving innovation in AI applications.

Key Skills

AI & ML Frameworks: PyTorch, TensorFlow, ONNX, NVIDIA TLT, NVIDIA TensorRT, Model Quantization, DeepStream, OpenCV, Yolo, Time Series Analysis, IoT (MQTT)
Computer Vision: DeepStream, OpenCV, TensorRT, Video Analytics, Object Detection.
Programming: Python, C++, SQL, CUDA.

Deployment & Optimization: GPU-accelerated Pipelines, Low-powered ARM-based Devices, Jetson Xavier NX.

Industry Expertise: Manufacturing, Petroleum, Telecommunication, Safety Systems.

Other: Data Science, NLP, Time Series Analysis, Gen-AI, LangChain.

Soft Skills: Excellent communication, problem-solving, analytical, and teamwork skills.

Experience

Senior AI Engineer | Sparkcognition | Bengaluru, India | May 2022 - Present

- Led AI-driven use cases for the petroleum industry, enhancing operational efficiency.
- Deployed AI solutions for metro stations to detect offensive activities, improving public safety.
- Reduced API license costs by implementing a local ANPR system.
- Designed and implemented algorithms for decision-making from multiple cameras for entry-exit management.
- Contributed to scene matching, TAS/PA system integration, and camera network optimization.
- Quantized models to achieve performance improvements and reduced resource footprint on various computer vision projects.
- Developed solutions for asset utilization and employee safety in warehouses, optimizing resource management.
- Reduced CPU utilization by 40% in a computer vision-based application, deployed on a low-powered ARM-based device.
- Scaled model deployment for over 10,000 sites, ensuring robust performance and operational efficiency.
- Led product development for a telecommunication audit application, driving innovation in network analysis.

Senior AI Engineer | Integration Wizards Solutions | Bengaluru, India | Oct 2018 - Jul 2021

- Led the development of a drone-based intrusion detection system using DJI drones and computer vision for real-time object detection and tracking.
- We implemented machine learning models for intrusion detection through CCTV cameras in warehouses, focusing on encroachment detection, glass falling zone detection, forklift near-miss violations, vehicle over-speeding, and PPE violations.
- Analyzed machine utilization data to optimize load/unload times, working hours analysis, and machine guarding.
- Developed time series analysis and predictive models for vehicle engine analysis in the petrol pump domain.
- Optimized GPU-accelerated pipelines for cross-platform computer vision solutions, improving system scalability.
- Applied AI solutions in manufacturing to automate and optimize processes, significantly improving efficiency.
- Built video POCs for various computer vision use cases, demonstrating AI's versatility in real-world applications.

Personal Projects

- **Solar Panel Inspection App**
 - Developed a solar panel inspection app using NVIDIA DeepStream and Jetson Xavier NX, leveraging YOLO-based models for thermal imaging to detect defects, improving maintenance efforts.
- **Helping Gardener**
 - Created an IoT and ML-based system to monitor soil fertility and recommend crop-specific planting, enhancing agricultural productivity.
- **Churn Prediction**
 - Analyzed customer data using R to predict churn, helping businesses enhance retention strategies.
- **Explored LoRa communication for long-range data transmission.**

Education

B.E in Electronics Engineering | MIT Academy of Engineering, Pune | May 2014 - July 2018

Certifications

- Jetson AI Specialist
- Time Series Analysis
- Machine Learning A-Z (Python & R)

Awards & Recognition

- Won the "Employee of the Month" Award three times at Sparkcognition.

- Top 11 team in e-Yantra 2016 (IIT-B).
- Finalist in Smart India Hackathon 2017 and Mitsubishi Electric Cup 2017.
- 2nd Prize for Line Following and Robo Race Robot Competition.
- Team Leader of Electronics for ROBOCON 2018.

Links

GitHub: <https://github.com/gourav1996>

LinkedIn: <https://www.linkedin.com/in/gourav-kumar1996/>