Keith Rodrigues

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Over 4 years of experience in developing cutting-edge computer vision algorithms for advanced driver assistance systems (ADAS). Proficient in software development, image analysis, pattern recognition, and deploying on-device deep learning solutions. Demonstrated expertise in solving complex image processing challenges and contributing to innovative, high-impact projects.

Skills

- Machine Learning
- Computer Vision
- OpenCV
- ROS/ROS2
- PyTorch, Tensorflow, Caffe, ONNX
- Python, C++
- Linux, Windows
- GIT, Docker, VS Code
- Communication
- Adaptability
- Team work
- Problem solving

Work Experience

Senior Data Scientist Goa, India
Visteon Corporation 04/2023 - 08/2023

Vehicle Surround View Monitor System

- Familiar with common camera models and calibration techniques.
- Automated the intrinsic and extrinsic camera calibration using Python and OpenCV.
- Led the high-precision calibration of the surround view system in the test vehicle.
- Successfully developed seamless bird's eye and 3D views using fisheye cameras.
- Designed a method using equirectangular projections to provide undistorted front and rear corner views of the vehicle.
- Enhanced on-device system performance by optimizing the OpenGL-based rendering pipeline, resulting in reduced latency.
- Executed simulation testing to identify corner cases and determine optimal camera configurations.

Embedded Software Engineer Goa, India
Visteon Corporation 07/2021 - 03/2023

- Liaised with teams from Texas Instruments and Samsung to import and evaluate deep learning models on their SoCs. Reported and helped resolve 20+ issues with their import and inference tools.
- Developed C++ based applications in ROS2 for end-to-end real-time deployment of the quantized models for level 2/2+ ADAS features on embedded hardware.
- Formulated a probabilistic occupancy grid for vehicle path planning using semantic segmentation.
- Assisted the validation and sensor fusion teams through SIL and HIL testing, actively resolving defects.

- Facilitated seamless software integration for customer demos, consistently delivering ahead of schedule.
- Conducted peer reviews for code changes.

Software Engineer Goa, India

Visteon Corporation 07/2018 - 06/2021

- Developed and finetuned robust deep learning models for traffic sign/light recognition, lane detection using semantic segmentation, and object detection using the SSD and YOLO frameworks.
- Evaluated the model performance against state-of-the-art models and conducted an extensive literature review.
- Generated object detection and classification datasets for vehicle occupant monitoring system to detect number of occupants and driver emotions.
- Utilized CVAT and LabelMe for data annotation and implemented augmentation techniques to improve the detection accuracy by over 10% in challenging scenarios.
- Proficient in managing and processing large scale datasets to train and validate computer vision models.
- Performed requirement analysis, authored test cases, and logged defects.

Additional Work Experience

Stadium Steward (part-time) Sheffield, UK

IPM group 03/2024 - 05/2024

- Ensured the safety and security of spectators, demonstrating strong problem-solving skills and attention to detail.
- Monitored crowd behavior and addressed disturbances, showcasing effective communication.
- Verified tickets and spectator credentials to control access to restricted areas.

Education

The University of Sheffield Sheffield, UK

Master of Science in Robotics 09/2023 - 09/2024

Project: Explainable deep learning for brain tumor diagnosis – Utilizing xAI techniques for visual explainability of the model predictions.

Relevant modules: Deep learning, Machine vision, Mobile robotics and autonomous systems.

Goa University Goa, India

Bachelor of Engineering in Electrical and Electronics 07/2014 - 05/2018

Group project: Arduino based hand-gesture control of television.

✓ Recipient of the Fomento Resources Gold Medal for outstanding academic performance (2018).