Sankalp Rajeev

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Professional Summary

Machine Learning Engineer with 3+ years of experience deploying scalable AI models and optimizing edge AI solutions, achieving up to 96% real-time detection accuracy and a 25% boost in computational efficiency. Expertise in computer vision, SLAM, and robotics, with a proven track record of delivering innovative AI solutions in dynamic environments. Proficient in Agile project management using Scrum to lead teams effectively and meet project goals.

EDUCATION

University Of Michigan — **Dearborn, MI**
M.S. in Artificial Intelligence - Computer Vision | MSE in Robotics Engineering — *09/2024 – 05/2026*
***GPA:** 3.80/4.00*

Arizona State University — **Tempe, AZ**
B.Sc. In Computer Science | Mathematical Concepts of Engineering — *08/2020 – 05/2024*
GPA: 3.71/4.00, *Dean's List*

EXPERIENCE

Mistral Solutions Pvt Ltd — **Bangalore, KA**
AI/ML Engineer Intern — *06/2024 – 08/2024*

- Deployed scalable AI models (VGG16, YOLOv8) on Qualcomm RB5 platform, achieving 96% real-time detection accuracy and improving computational efficiency by 25%.
- Optimized Lua scripts for AHRS monitoring and obstacle avoidance, increasing system reliability by 30% and resolving critical compatibility issues with DS1820 sensor integration via Arduino.
- Integrated and optimized the Qualcomm SNPE SDK for AI model deployment on edge devices, utilizing model conversion and optimization tools from the Qualcomm AI pipeline. Improved computational efficiency by 25%, while enabling seamless communication between the deployed model and Cube Orange Plus for real-time drone data processing.

Astroseed — **Tempe, AZ**
Software Developer — *08/2023 – 05/2024*

- Led an Agile team to deliver AI-driven solutions, reducing project delays by 20% through effective sprint planning and task prioritization.
- Enhanced a YOLOv5-based object detection pipeline for plant identification by utilizing sensor fusion techniques to integrate lidar and 3D depth cameras, achieving 98% accuracy and boosting real-time processing efficiency by 25%.
- Designed and implemented autonomous navigation using SLAM in Gazebo, enabling robotic movement within controlled environments with a 15% reduction in path planning errors.

Arizona State University — **Tempe, AZ**
Teaching Assistant — *08/2022 – 05/2024*

- Mentored and guided over 100 freshmen in computer science, designing customized support programs that increased self-reliance. Developed tailored learning strategies for students.

Machani Robotics — **Bangalore, KA**
Software Development Engineering Intern — *06/2022 – 08/2022*

- Programmed and optimized a 6-DOF robotic arm using CAN communication protocols, increasing operational efficiency by 30% and ensuring robust system performance for industrial applications.
- Achieved 90% accuracy in translating visual data into 3D coordinate drawings by designing and implementing autonomous task functionalities using Test-Driven Development (TDD), enhancing execution precision by 20%.
- Advanced vision capabilities by integrating image classification and object detection algorithms with a 3D depth camera using ROS, Python, and C++, improving object recognition accuracy by 25%.

PROJECTS

Image Caption Generation Using CNN-LSTM with Beam Search Optimization

- Developed an AI-driven image captioning system via Flask using InceptionV3 for feature extraction, LSTM for sequence generation, and GloVe embeddings, achieving a 20% performance improvement with Beam Search optimization.
- Bridged computer vision and NLP, achieving contextually accurate captions with a 20% performance improvement.

Panorama Auto Stitching Tool

- Developed a panorama tool using BRIEF descriptor and RANSAC, achieving 92% image alignment accuracy and enhancing outlier resistance by 30%.

SKILLS

- Languages: Python, C, C++, Java, JavaScript, MATLAB, Lua Script
- AI/ML Frameworks and Tools: TensorFlow, PyTorch, Keras, Scikit-learn, NumPy, Pandas, Matplotlib, Seaborn
- Tools: AI Deployment, Computer Vision, Neural Networks, SLAM, Robotics, ROS, Embedded Systems, Optimization.