# Sankalp Rajeev

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## Professional Summary

Machine Learning Engineer and Software Developer with hands-on experience in AI model development, deployment, and optimization. Proficient in Python, TensorFlow, PyTorch, and ROS with expertise in computer vision, real-time AI processing, and robotics engineering. Adept at building scalable, end-to-end AI solutions and deploying them on edge devices.

## EDUCATION

**University Of Michigan** — **Dearborn, MI**
*M.S. in Artificial Intelligence - Computer Vision | MSE in Robotics Engineering* — *09/2024 – 05/2026*
***GPA:** 3.90/4.00*

**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 custom AI models (VGG16, YOLOv8, byteTrack) on the Mistral Eagle Kit, an edge device built on the Qualcomm RB5 platform, achieving 96% real-time detection accuracy.
- Created Lua scripts for AHRS monitoring and obstacle avoidance; integrated DS1820 sensor via Arduino to resolve compatibility issues.
- Integrated Qualcomm SNPE SDK on MRD5165 for AI model deployment and enhanced drone sensor communication with Cube Orange Plus.

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

- Scrum Master for a team of 5, reducing project delivery delays by 20% and improving team collaboration through Agile practices.
- Integrated lidar and 3D depth cameras for plant identification using YOLOv5, achieving 98% accuracy.
- Implemented autonomous navigation (SLAM) for robotic movement within controlled environments using Gazebo.

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

- Mentored 100+ freshmen in computer science, designed customized guidance programs enhancing self-reliance and boosting academic performance.

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

- Collaborated to program a 6-DOF robotic arm using advanced software solutions and integrated 6 RMD motors, optimizing performance via CAN communication protocols.
- Programmed the robotic arm for autonomous tasks,achieving 90% accuracy in translating visual data to drawings in 3D coordinate space.
- Pioneered the arm's vision capabilities, integrating image classification and object detection with a 3D depth camera, utilizing ROS, Python,and C++.

## PROJECTS

**Panorama Auto Stitching Tool**

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

**Automatic License Plate Recognition System**

- Created a system using TensorFlow and OCR to detect and process license plates in real-time, achieving 98% accuracy in detection and character recognition.

**3D Reconstruction and Camera Calibration**

- Developed 3D reconstruction using triangulation and epipolar geometry.
- Implemented camera calibration with checkerboard patterns, optimizing intrinsic and extrinsic parameter estimation.

## SKILLS

- Languages: Python, C, C++, Java,JavaScript,MATLAB,Lua Script
- AI/ML :TensorFlow, PyTorch, Scikit-learn, Neural Networks,NumPy, Pandas, Scikit-learn, Matplotlib,Seaborn
- Others: Computer Vision, AI Model Deployment, Embedded Systems, Robotics, DSA,Edge devices,ROS