Kottapeta Sai

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Portfolio: `https://sipayi.github.io`

Summary

I am a passionate robotics enthusiast with hands-on experience in developing innovative robotic systems. My skills in control systems, embedded systems, and AI integration have led to successful projects and achievements in competitions. I am committed to solving real-world challenges and eager to contribute to impactful research in the field of robotics.

Projects

Drone Development Project (01/2025 – Present):
- Designed and built a UAV using Pixhawk for flight control and integrated multiple sensors for stability.
- Developed Python scripts to control the drone: automated takeoff to 3 meters, hover for 30 seconds, and land smoothly.
- Conducted PID tuning trials to optimize flight stability and responsiveness.

Image Classification Using TensorFlow (11/2024 – 12/2024):
- Developed a Convolutional Neural Network to classify 24 categories of fruits and vegetables with 95% accuracy.
- Implemented preprocessing pipelines and optimized training processes.
- Used ChatGPT for coding assistance to enhance productivity.

Self-Driving Car Development (07/2024 – 10/2024):
- Built and tested an autonomous vehicle in a virtual environment using ROS2 and Gazebo.
- Integrated real-time obstacle detection and road-edge tracking.
- Conducted extensive simulations for environment mapping and safe navigation.

Key Achievements

2nd Place: NXP AIM Competition – Developed a self-driving car with camera and LiDAR integration.

2nd Place: ROBOTRAC Competition – Built and programmed a high-accuracy line-following robot with HuskyLens and Arduino.

Skills

Languages: Python, CPP, HTML, CSS, JS

Technologies: ROS2, OpenCV, Git, Linux, Embedded Systems, IoT

Hardware: Pixhawk, Microcontrollers, PCB Design, Robotics Systems, RaspberryPi

Education

Rajiv Gandhi University of Knowledge Technologies	**Ongole**
B.Tech in Electronics & Communication Engineering	*08/2022 – 05/2026*
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Pre-University Course	*08/2020 – 05/2022*
Z.P. High School	**Kondur**
High Schooling	*08/2016 – 05/2020*

Extracurricular Activities

Robotics Club: Active member and workshop leader on Arduino, IoT, and robotics topics.

Competitions: Regular participant in robotics contests and hackathons, focusing on innovative robotic systems.