Autonomous Quadcopter for Surveillance

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Abstract*: The use of drone technology is becoming increasingly popular. Finding applications, across various industries. In agriculture drones are employed for tasks such as applying pesticides and fertilizers monitoring crops and creating maps. The construction sector utilizes drones to inspect job sites and track progress. Additionally, the film industry benefits from photography using drones while search and rescue operations rely on them to reach areas. Overall drone technology has the potential to revolutionize industries by offering solutions to previously challenging problems. We propose the development of an AI based autonomous drone system that can be deployed in areas for applications including surveillance and warehouse management. This system incorporates a PI CAM V2 camera mounted on a quadcopter equipped with GPS technology. The drone operates autonomously without the need for a pilot thanks to software, like Robot Operating System (ROS) other cutting-edge technologies.*

Keywords: Multipurpose, Robot Operating System, Simulation, Surveillance, Tracking, Quadcopter, OpenCV, Machine Learning, Object Detection

REFERENCES

[1].OpenCV: Cascade Classifier.

[2].Chandan G, Ayush Jain, Harsh Jain, Mohana "Real Time Object Detection and Tracking Using Deep Learning and OpenCV" Proceedings of the International Conference on Inventive Research in Computing Applications (ICIRCA 2018).

[3].Aakash Sehrawat, Tanupriya Choudhury, Gaurav Raj "Surveillance Drone for Disaster Management and Military Security" International Conference on Computing, Communication and Automation (IC- CCA2017).

[4].Reem Alshanbari, Sherjeel Khan, Nazek El-Atab "AI Powered Un- manned Aerial Vehicle for Payload Transport Application".

[5].Leo Pauly, Deepa Sankar, "A Novel Online Product Recommendation System Based on Face Recognition and Emotion Detection", (ICCICCT, 2015).