Sentinel Eye: Wild Animal Intrusion Detection Using IOT

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Abstract: *This project focuses on solving the common problem of wild animals entering farms and causing damage to crops and property. Farmers living near forest areas often face losses because of animals like wild boars, monkeys, or deer. Traditional methods such as fencing, guarding, or normal CCTV systems are not always effective and can be costly. Therefore, a smart and automated solution is needed to protect farms and improve farmer safety.*

The proposed system uses modern technologies like Artificial Intelligence, Machine Learning, and IoT to detect animal intrusion. A camera connected to a Raspberry Pi captures images from the farm area, and deep learning models such as YOLO or CNN are used to identify animals from the captured images. This image-based detection helps the system recognize animals accurately without requiring continuous video processing.

Once an animal is detected, the system immediately sends an alert message to the farmer or concerned authority with the detection details. At the same time, a sound alarm is activated to scare the animal away from the farm area. The system also stores captured images and detection data, which can be useful for monitoring and future analysis.

The main goal of this project is to create a low-cost, easy-to-use, and efficient solution for farmers, especially in rural areas near forests. By combining AI, computer vision, and IoT technology, the system helps reduce crop damage, improves safety, and supports smart farming practices while maintaining a balance between human activities and wildlife..

Keywords: Farm Animal Intrusion Detection, Image-Based Detection, Deep Learning, YOLO, CNN, Raspberry Pi, Internet of Things (IoT), Smart Farming, Computer Vision, Wildlife Monitoring, Crop Protection, Public Safety