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Wild Animal Detection System

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Abstract: Increasing encounters between humans and wild animals due to habitat overlap have raised serious safety concerns, particularly in rural and forest-adjacent areas. To address this, the proposed system introduces a real-time Wild Animal Detection System (WADS) that utilizes artificial intelligence and IoT technologies. By integrating sensors such as infrared and PIR motion detectors with an ESP32-CAM module, the system actively monitors designated zones. When animal movement is detected, the system captures images and processes them using a lightweight convolutional neural network (CNN) for accurate classification. On positive identification, real-time alerts are triggered via GSM and GPS modules, notifying nearby residents and authorities. The platform offers a cost-effective and scalable solution for early warning systems in human-wildlife conflict zones. The project is implemented using Python and Blynk for seamless mobile-based monitoring and control.

Keywords: Wildlife detection, ESP32-CAM, Real-time alert system, IoT-based monitoring, GSM-GPS integration, Convolutional Neural Network (CNN)



