AI Based Object Detection with Live Tracking

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Abstract: *Our case-study titled "AI-based Object Detection with Live Tracking" combines advanced technologies to create a comprehensive system for real-time object detection and location tracking. This abstract summarizes the key components and functionalities of the project. The project leverages the ESP32-CAMmodule for object detection, utilizing artificial intelligence algorithms to recognize and classify objects within a captured video stream. This AI-based approach allows for efficient and accurate detection of various objects in different environments. The ESP32-CAM's capabilities make it an ideal platform for on-device processing, ensuring low latency and real-time performance. In addition to object detection, the system incorporates a GPS module (specifically, the NEO-6M) for precise location tracking. This module enables the system to determine its exact geographical coordinates, providing essential location data for tracking purposes. Integration with the GPS module ensures that the system can accurately pinpoint the position of detected objects in outdoor settings. Furthermore, the project incorporates the SIM800 module to enable live location updates via SMS. Upon detecting an object and determining its location, the system utilizes the SIM800 module to send real-time SMS notifications containing the object's coordinates to a designated phone number. This feature enhances the system's usability by allowing users to receive immediate alerts and track objects remotely. Overall, the combination of AI-based object detection, GPS based location tracking, and live SMS notifications makes this project a versatile solution applicable to various scenarios such as security surveillance, wildlife monitoring, or asset tracking. The system's integration of ESP32-CAM, GPS NEO-6M, and SIM800 modules showcases an innovative approach to combining multiple technologies for effective and practical real-time object detection and tracking applications. The abstract highlights the project's core functionalities and sets the stage for further detailed exploration and implementation of this integrated system*

Keywords: Artifical Intelligence, Camera, GPS, GSM, SMS

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