IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 1, May 2025
Impact Factor: 7.67

# Motion Following Motorized Camera Base

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**Abstract:** *In the present era, security and surveillance are essential for homes and working spaces. The shortcomings of fixed-camera systems have become apparent in such a scenario. Fixed-camera systems usually create blind spots and need to be installed multiple times, thus raising costs and decreasing efficiency. Our project seeks to overcome these shortcomings by creating a smart, motion-tracing motorized camera system. The concept is to have a single-camera system that can automatically track movement in real time in a 180° field of view. This is done by combining five PIR motion sensors with an ESP32 microcontroller to analyze the data and drive an MG995 servo motor to turn the camera in the direction of the detected motion. The device comes with a USB webcam for real-time video streaming to a PC and relies on the Blynk app to deliver real-time email alerts to users. Through integration of several technologies—motion detection, servo control, and IoT connectivity—our project provides an efficient, cost-effective, and dynamic alternative to traditional surveillance systems*

**Keywords:** Motion Detection, ESP32, PIR Sensors, MG995 Servo Motor, USB Webcam, Blynk App, Smart Surveillance, Real-Time Tracking, IoT Security, Camera Automation



DOI: 10.48175/IJARSCT-26193