

# Wall Hawk: An AI-Based Threat Detector for Intelligent Surveillance Camera

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**Abstract** – In today's world of evolving security threats and modern warfare, there is a growing need for advanced systems that enhance situational awareness and threat detection. The "Wall Hawk" project is an AI-powered surveillance solution designed to aid counter-terrorism and military missions. It integrates microwave radar for behind-wall human detection and autonomous robots equipped for bomb and gas sensing, ensuring 360° environmental monitoring. The system combines NodeMCU and Raspberry Pi for efficient control and processing, using radar sensors, gas/metal detectors, and AI-enabled cameras for real-time weapon and explosive identification. With Python and OpenCV, it employs deep learning for accurate image analysis and threat classification. Wall Hawk reduces human risk, minimizes false alarms, and delivers rapid, actionable intelligence—making it ideal for military zones, border control, rescue operations, and high-security areas.

**Keywords** – Threat Detection, Deep Learning, Bomb Detection, Fog/Gas Detection, Behind-Wall Scanning, Autonomous Robot, Military Defense Robot.