

# AI Powered Smart Security Bordering System

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**Abstract:** *The goal of the AI-Powered Smart Border Surveillance System project is to enhance national security through the integration of artificial intelligence with real-time surveillance, object detection, and intelligent alert systems. This project aims to overcome the limitations of manual border monitoring by automating the detection of unauthorized movements, suspicious behaviors, and potential threats in restricted zones. The system leverages computer vision models such as YOLOv11 for high-speed and high-accuracy object detection, combined with real-time video processing through OpenCV. A GUI-based control panel allows operators to monitor, upload footage, and initiate detection on demand. Furthermore, the system enables 24/7 surveillance through webcam access and motion tracking, storing key threat activities with timestamps for evidence and review. By eliminating delays in manual response and improving situational awareness, the model ensures faster, more accurate decision-making. The implementation of smart alerts and data recording mechanisms allows the border authorities to receive immediate notifications about any dangerous activities. This project demonstrates how the fusion of AI, real-time analytics, and GUI-based applications can be a cost-effective and scalable solution to modern border protection challenges, minimizing human error and maximizing security efficiency.*

**Keywords:** YOLO Algorithm, Surveillance, AI, Border and Security

