TICT3153

Software Engineering

ICT EXPO 4.0

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Project Title: AI Smart Animal Crossing Alert System

Problem Statement:

Animals unexpectedly crossing roads, particularly close to rural or forested areas, cause numerous traffic accidents each year. Vehicle damage, injuries, and animal deaths frequently result from drivers' inability to recognize animals in time. The safety of both people and animals is at stake, and in many areas, the warning systems that are in place are insufficient or nonexistent. Protecting wildlife and saving lives can be achieved by preventing such mishaps through intelligent detection.

Proposed Solution:

This project proposes an AI-based alert system that detects animals crossing roads using a camera feed. The system uses a **YOLO (You Only Look Once)** deep learning model to identify animals such as cows, dogs, cats, and elephants in real time. Once detected, it displays a visual alert on a dashboard, warning drivers to slow down. The system is built using **Python, OpenCV, and Streamlit**, making it lightweight, accurate, and easy to deploy on roadside or vehicle-mounted cameras.

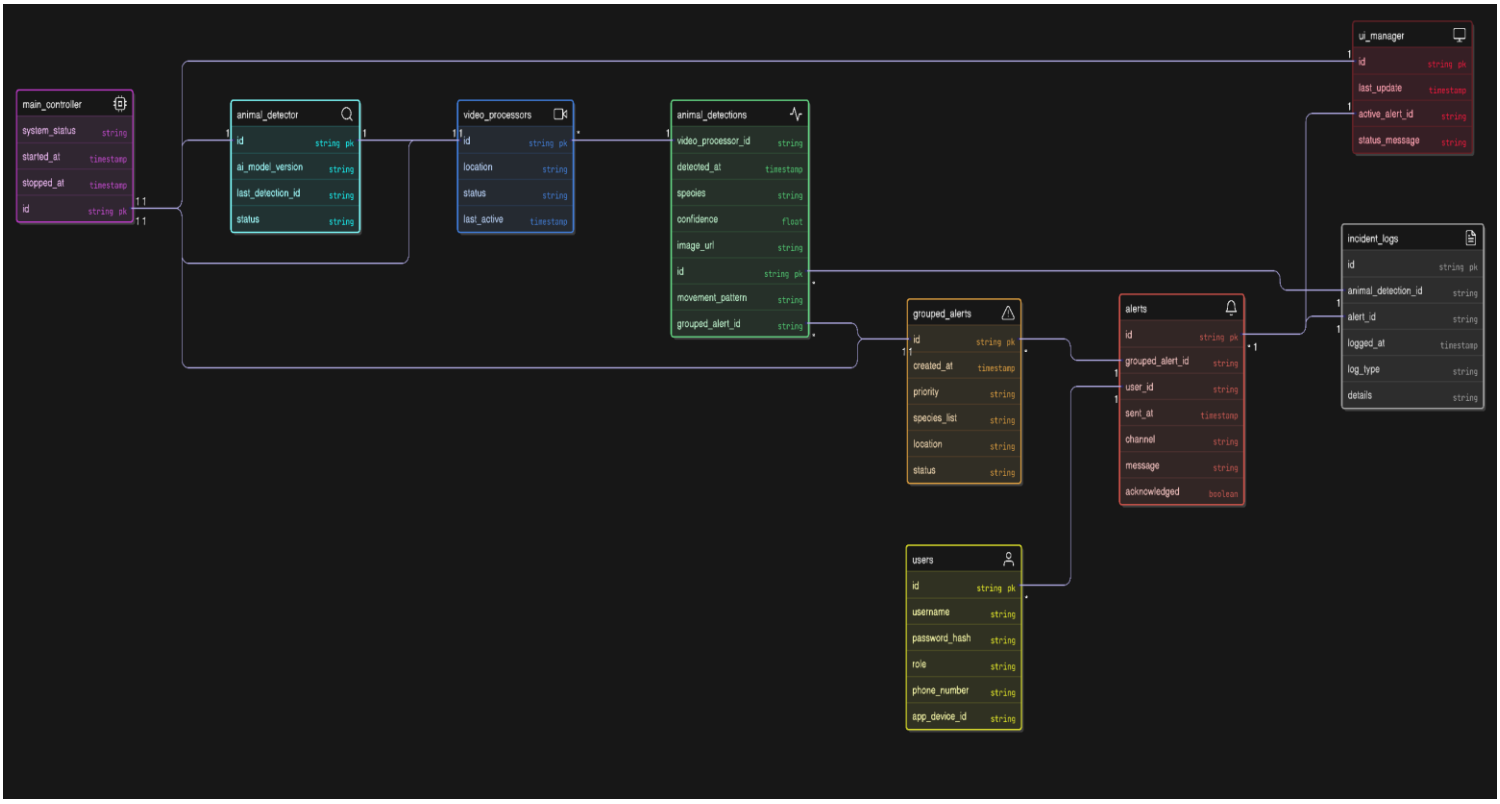
Key Features:

- Real-time animal detection using AI (YOLOv8)
- Instant visual alert when animals are detected
- Works with both webcam and uploaded video footage
- User-friendly dashboard interface built with Streamlit
- Easily extendable to IoT-based hardware systems (lights, buzzers)

Expected Outcome:

The final product will be a working AI application that can detect animals from live or recorded video feeds and alert drivers through an on-screen warning. It can be further expanded to connect with IoT devices for real-world implementation across highways or railway tracks. The system aims to reduce road accidents, enhance driver awareness, and promote safer coexistence between humans and animals.

AI Smart Animal Crossing Alert System Data Model



THANK YOU