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Creating Alert Messages Based On Wild Animal Activity Detection

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Abstract
Wild creatures crossing roadways in forested areas, including elephants, deer, leopards, and tigers. Human-animal collision is a serious problem that affects human safety, property and wildlife. The number of these collisions has increased substantially over the last decades. Furthermore, it is also reported that road-kill of wild animals had become a significant threat to wildlife population. Rapid industrialization spreads urban areas; and animals enter nearby villages in the summer for water due to the dryness of nearby water bodies. But speed breakers are not enough for this human animal conflicts which could be overcome by installing detection system that alerts the Wildlife may die when crossing highways to access various habitat segments. Road fatalities are a widespread occurrence, particularly in India, which has the second- largest road network in the world with a total length of63.7lakh km. It conducted a survey in 2012 and discovered nearly 3,000 animal deaths. This has sparkedanimal type using image processingthen Alert messages can then be sent to ensure the safety of people and foresters. While computer vision and machine learning-based approaches are frequently used for animal detection.lusion (contribution).
Keywords: ***arduino uno, GSM, internet of things, PIR sensor, Transformer***

INTRODUCTION

Human-animal collision is a serious problem that affects human safety, property and wildlife. The number of these collisions has increased substantially over the last decades. Furthermore, it is also reported that road-kill of wild animals had become a significant threat to wildlife population. Rapid industrialization spreads urban areas; and animals enter nearby villages in the summer for water due to the dryness of nearby water bodies. But speed breakers are not enough for this human animal conflicts which could be overcome by installing detection system that alerts the Wildlife may die when crossing highways to access various habitat segments. Road fatalities are a widespread occurrence, particularly in India, which has the second- largest road network in the world with a total length of63.7lakh km. It conducted a survey in2012 and discovered nearly 3,000 animal deaths. This has sparked creating an animal detection system that alerts drivers and allows them to take preventative action. Therefore, the goal of this project is to create an animal detection system that alerts drivers to potential animal collisions. The sensor data released will have an effect that can interfere with the movement of wild animals. Objects of wild animals. And also an efficient model is required to monitor its locomotion and provide its location information. Find out the animal type using image processing then Alert messages can then be sent to ensure the safety of people and foresters While computer vision and machine learning-based approaches are frequently used for animal detection.

Sub section

• The system architecture of the proposed hybrid VGG−19+ Bi-LSTM model is demonstrated. The proposed architecture comprises five phases of development steps, which includes data pre-processing, animal detection, VGG−19pre- trained model-based classification, extracting the prediction results, and sending alert messages.

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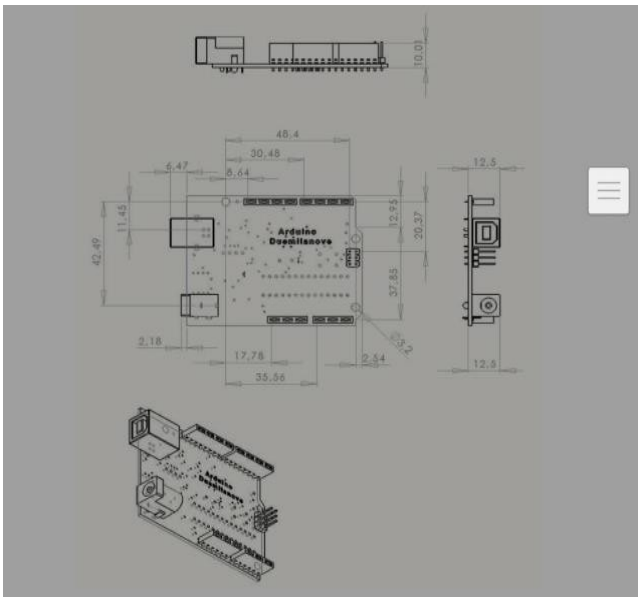
In the data pre-processing phase, 45k animal images were collected from different datasets such as camera trap, wildanimal, and the hoofed animal dataset. Thecollected images were rescaled to the size of 224×224 pixels and demo. In the second phase, we pass the pre-processed images into YOLOR object detection model, which identifies the animal present in an image using bounding boxes as illustrated
Sub section 1.4.



This system's overall power needs are met via powersupply unit. The proposed system containsTransformer,Bridge rectifier,Voltage regulator7812 & 7805.The transformed rused here is a Step down transformer which is used to step down 230v to 12vAC.The output step down transformer will be given to the bridge rectifier.Amongthe rectifiers, the bridge rectifier is the most efficient rectifier circuit.The Bridge rectifier is used to convert the 12v AC to 12v DC supply. Capacitor acts as a filter circuit by removing noises and fluctuations in the supply. A voltage regulator generates a fixed output voltage of a preset magnitude that remainsconstant regardless of changes to its input voltage or loadcondition

METHOD:

A GSM modem can be an external device or a PC Card/ PCMCIA Card. Typically, an external GSM modem is connected to a computer through a serial cable or a USB cable. A GSM modem in the form of a PC Card/PCMCIA Card is designed for use with a laptop computer. It should be inserted into one of the PC Card / PCMCIA Cards lots of a laptop computer. Like a GSM mobile phone , a GSM modem requires a SIM card from a wireless carrier in order to operate.As mentioned in earlier sections of this SMS tutorial, computers use AT commands to control modems. Both GSM modemsand dial-up modems support a common set of standard AT commands. You can use a GSM modem just like a dial-up modem. In addition to the AT commands, GSM modems support an extended set of AT commands. extended AT commands are defined in the GSM standards. Withthe extended AT commands, you can do
Reading, writing and deleting SMS messages.

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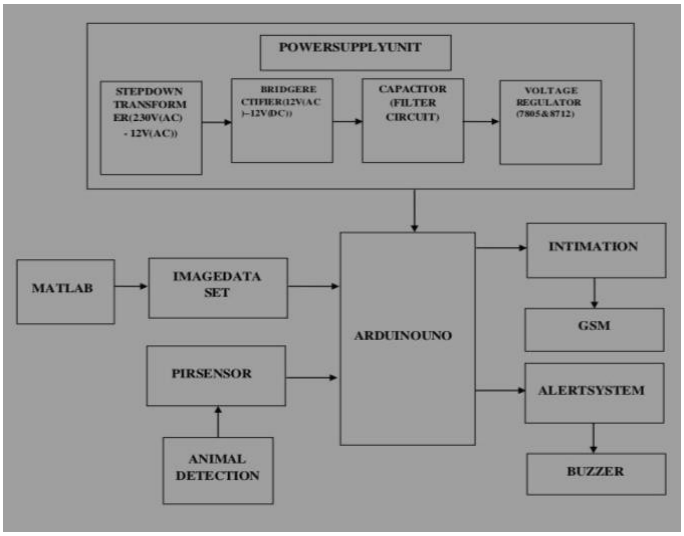
Table 1.



Tables

Programs written using Arduino Software are called sketches. These sketches are written in the text editor and are saved with the file extension. The editor has features for cutting/pasting and for searching/replacing text. The message area gives feedback while saving and exporting and also displays errors. The console displays text output by the Arduino Software ,including complete error messages

Figures

The voltage produced by an unregulated power supply will vary depending on the load and on

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variations in the AC supply voltage. For critical electronics applications a online regulator will be used to stabilize and adjust the voltage.This regulator will also greatly reduce the ripple and noise in the output direct current. Linear regulators often provide current limiting, protecting the power supply and attached circuit from over current.

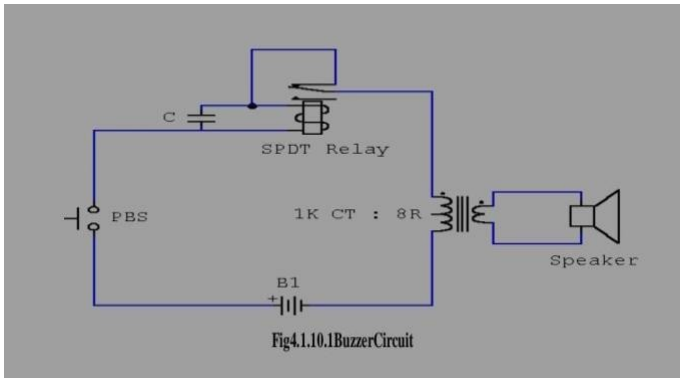
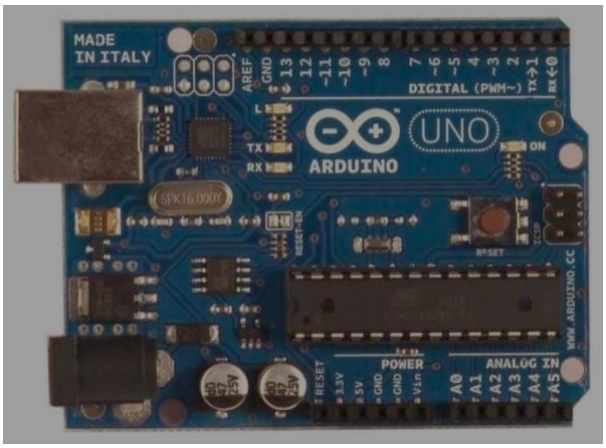


FIGURE 1.

2. RESULTS AND DISCUSSION



Each of the14digital pins on the Uno can be used as an input or output, using pin Mode(), digital Write(),and digital Read() functions. They operate at 5 volts. Each pin can provide or receive a maximum of 40 mA and has an internal pull-up resistor (disconnected by default) of 20-50kOhms. In addition, some pins have specialized functions:
· Serial:0 (RX) and 1 (TX). Used to receive (RX) and transmit (TX) TTL serial data.· T These pins are Connected to the corresponding pins

CONCLUSION

This system introduces two way to detecting wild animals and helps to monitor the activity of animals. This hybrid approach greatly helps to save the animals from human hunting and humans from animal sudden attacks by sending an alert message to the forest officer. This model introduces novel approaches to upgrade the performance of image processing techniques in wider applications and real time cases. The proposed model has been evaluated on four different benchmark datasets that contain animal based datasets camera trap dataset, wild animal dataset, And PIR sensor used to find the animals activity.The experimental results show the improved performance of our model over various quality metrics. Henceforth, the proposed model outperforms earlier approaches and

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produces greater results
with lower computation time.

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