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PREVENTING WILD ANIMALS FROM ACCIDENTS USING MATLAB CODING

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ABSTRACT: *The impact of roads in the environment is of increasing international interest and concern. The road impacts are habitat loss, habitat fragmentation and habitat degradation that affect wildlife and its habitats both directly and indirectly especially on larger mammals like Bengal tiger, Indian elephant, Giraffe. These animals have large varieties or undertake seasonal movements over large areas of mainly natural or semi-natural habitat. There has been less attention overall to animals in more modified landscapes with a long history of intensive land management and land use. On the other side, the road is the most beneficial thing for the mankind, without which globalization is very hard to achieve. Especially in natural reserves, wildlife conservation and protection is a challenging and one hot spots near human environment (i.e., roads, railways, and other civil infrastructures). This project mainly proposes image processing based system for wildlife management in the surrounding area of human passages to establish safe ways for animals to cross transportation infrastructures such as road.*

I. INTRODUCTION:

In India, across protected wildlife areas, there are many highways and roads, for example mudumalai wildlife sanctuary in Tamilnadu. In some places it is inevitable that the wild animals will enter the highways. This always leads to severe fatal accidents to both animals and human life. Till now there are no proper systems to prevent these losses. The main aim of the project is at developing a system to prevent accidents like these and large wild animals are detected near the human-animal environment overlap to avoid fatal accidents.The main purpose of this system is to prevent the man animal conflict that seen across the world.These kind of conflicts leads to fatal accidents for both the wildlife and human life.The exact project that has been proposed is to prevent the conflict by using MATLAB analysis.

II. EXISTING SYSTEM:

In the present existing system, to detect the movement of the animal on the roadside the PIR sensor is used by the infrared light radiating from the object. Around the sensitive areas the boundary walls and solar fences are built to prevent the wild animal attacks. But this system doesn't allow the animals to have in-dependent movement and large living range.The various systems are being used by the research institutions to monitor the movement of lions, tigers, elephants, olive turtles, and other wild animals to know their movements and the pattern of the habitat. Themajor drawback of IR sensor is it not only detect the wild animals but also detects the movement of small birds and even human being. The system installation becomes difficult as it is of high cost and is not always possible.

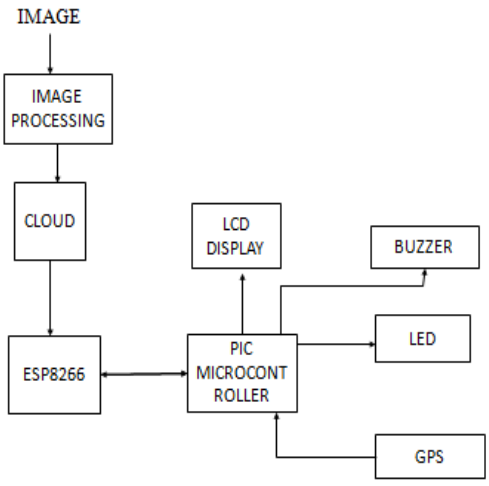
III. PROPOSED SYSTEM:

The exact proposed system of the project is based on detecting the movement of wild animalswhile crossing the roads using detector circuit on both sides of roads. Using image detection circuit the animal is detected. The main focus of the project is to avoid accidents causing harm to animals and to avoid the animal vehicle crashes along the roadsides. The image captured is processed in image processing technique and edge algorithm is used to identify the height and shape of the structure of the animal for exact identification.

IV. WORKING:

For the implementation of this project, a module on the exterior of road and another module along with traffic signal. The module at the roadside has an camera, which is used to capture image of the animal on the roadside.

BLOCK DIAGRAM:



Using the camera placed on the roadsides the image of the animal is captured. The image captured is processed on the the MATLAB software. It detects and identifies the type of animal using edge detection algorithm. Then the obtained information is stored in the cloud server for the authority to verify it later. Using PIC microcontroller the coding is processed and it displays whether the animal is present or not. If the animal is present, then the given alarm will turn on , even after the alarm if the animal did not move then the traffic signal

gets the red light. The vehicle that passes through that road will tend to stop until the animal passes. To locate the exact location of the animal the GPS is used that is present in the system.

The given flow diagram explains the flow of the system.

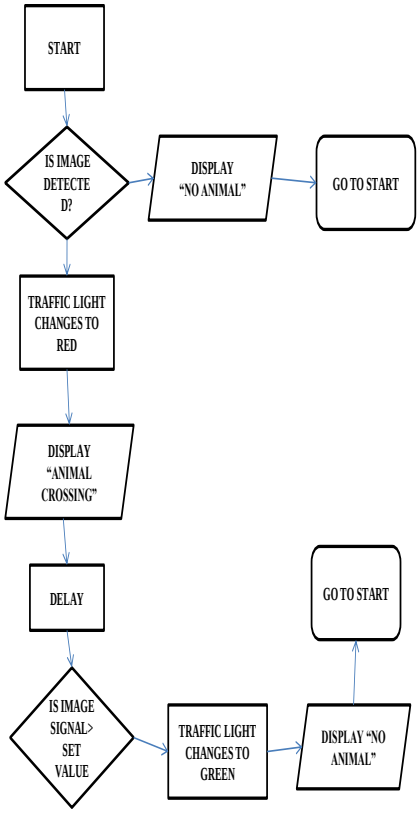


Fig 2. Flow Chart Of The System Showing The Sequence Of The Events Taking Place

V. PRACTICAL CONSTRAINTS:

Multiple detection devices has to be placed along the roadside to extend the system over the range of outfit. To process the image captured by the camera the MATLAB program is used. The detectors placed on the roadside sends the image and the image detection and the edge algorithm process the image and gives the result.

VI. SIMULATION RESULTS:

The result obtained during simulation is mentioned in the fig 3.

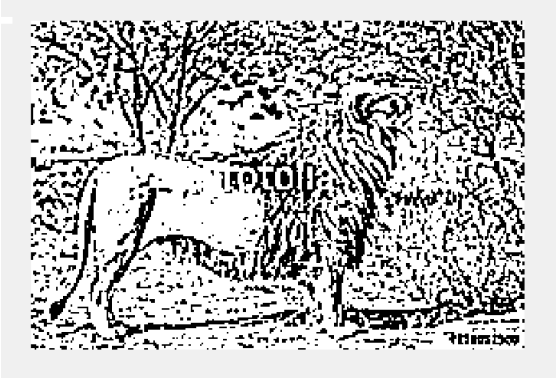


Fig 3..Simulation Results

VII. CONCLUSION:

The subject extends to conserve wildlife and also avoids accidents causing harm to human and animals life. Themain advantages of our systems is design of low cost, large scale effective system to avoid the accidents caused by animals and also preserve wild life. The project focuses on avoiding the animal vehicle crashes along the roads crossing the wildlife sanctuaries or forest. The low cost cameras are deployed in this system along the road side. In this paper the design of the camera and the programming of the processor are explained in detail. Using MATLAB simulation software the deployment of detection device and performance of the project is also tested.

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