

# AI Based Farm Land Protections Against Wild Animals

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**Abstract-** Now days the application of “Internet of things” is spread over widely in such as health, agriculture, hospitality, smart environments. In this proposed system we focus on agriculture, forest and wild animals monitoring. In this system, we are using the Internet of things for preventing the wild animals attack on agricultural lands that are nearer to the forest. In this project we use motion sensor, sound sensors to detect movement of animals near the border of the forest. According to data’s from the sensors the controller will make decision and commands speakers to produce the noise which prevent the animals to enter the agricultural land and crossing the forest border. Simultaneously information’s related to animal intrusion will be send to the nearby forest office, farmers with the help of IOT to take safety precautions measures.

## I. INTRODUCTION

In India agriculture is playing a major role. In other words farmer is the main backbone of our country. More than 50% of Indians are depending on the agriculture. But the formers of India face many problems as per the crops. Among those the forming lands that are nearer to the forests were facing problem of attack of wild animals on the crops. These wild animals attack leads to loss of crops, and also some time it cause death of formers, domestic animals also wild animals. Our main aim is to earlier detect prevent wild animal attack on the forming lands, villages nearer the forest areas.

### Literature Survey:

- AUTOMATIC FARMING FOR MINIMUM WATER USAGE AND ANIMAL PROTECTION USING SOLAR FENCING WITH GSM
- MONITORING APPLICATION FOR ANIMAL REPELLING DEVICES IN SMART AGRICULTURE
- MACHINE LEARNING-BASED ACOUSTIC REPELLENT SYSTEM FOR PROTECTING CROPS AGAINST WILD ANIMAL ATTACKS

The proposed system gives a technical solution for animal attack on agriculture problem, by using the internet of things. This project is focused on the detection of wild animal’s movements near the border of the forest. The sound recognition module senses the animal sounds and movements. If any animal movement is identified by the sound recognition module, controller will make necessary precaution decision such as rising alarm to prevent the entry of wild animal into the agriculture land. And shocking mechanism is activated if animals exists their even after buzzer alert Controller continuously monitor the data’s and the same circumstance exists it will send alert to and to the farmer. These above mentioned precaution activities will prevent the people and wild animal’s conflicts.

## II. EXISTING SYSTEM

In India agriculture is playing a major role. In other words farmer is the main backbone of our country. More than 70% of Indians are depending on the agriculture income. But the farmers of India face many problems, among those one of the problems was attack of wild animals on the crops. These wild animals attack leads to loss of crops, cause death of farmers, domestic animals and even wild animals. Our main aim is to earlier detection and prevention of wild animal attack on the agriculture lands in the villages nearer the forest areas.

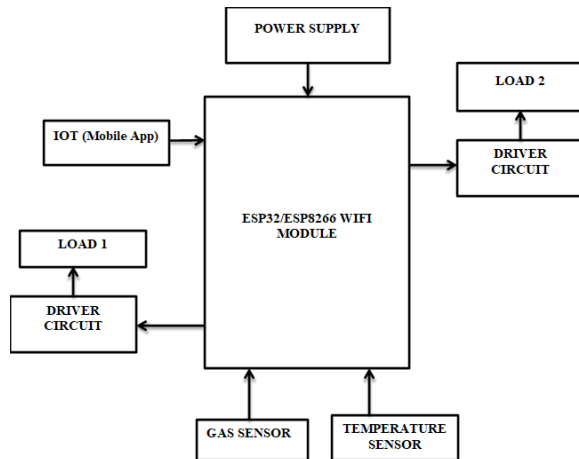
### 2.1. Disadvantages:

- Crops wastage due to the attack of wild animals.
- Sometimes unexpectedly Human deaths also occur.
- Wild animals affected because of electric shocks.

## III. PROPOSED SYSTEM

The proposed system gives a technical solution for animal attack on agriculture problem, by using the internet of things. This project is focused on the detection of wild animal’s movements near the border of the forest. The sound recognition module senses the animal sounds and movements. If any animal movement is identified by the sound recognition

module, controller will make necessary precaution decision such as rising alarm to prevent the entry of wild animal into the agriculture land. And shocking mechanism is activated if animals exists their even after buzzer alert Controller continuously monitor the data's and the same circumstance exists it will send alert to and to the farmer. These above mentioned precaution activities will prevent the people and wild animal's conflicts.



#### IV. HARDWARE OVERVIEW

##### 4.1 Microprocessor ESP32:

ESP32 is a low-cost System on Chip (SoC) Microcontroller from Espressif Systems, the developers of the famous ESP8266 SoC. It is a successor to ESP8266 SoC and comes in both single-core and dual-core variations of the Tensilica's 32-bit Xtensa LX6 Microprocessor with integrated Wi-Fi and Bluetooth.

The good thing about ESP32, like ESP8266 it has integrated RF components like Power Amplifier, Low-Noise Receive Amplifier, Antenna Switch, Filters and RF Balun. This makes designing hardware around ESP32 very easy as you require very few external components.

##### 4.2 Connection of Relay with Microprocessor:

This paper examines the interface between a microprocessor and relay for controlling high-power devices. It covers each step, from identifying relay pins to connecting the relay module to the CPU. The abstract emphasizes the necessity of programming for relay control, making it a useful resource for both beginners and experienced electronics professionals.

#### V. SOFTWARE OVERVIEW

##### 5.1 Arduino software(IDE):

Arduino is an open-source electronics platform which is based on easy-to-use hardware and software. Arduino boards can read inputs - light on a sensor, a finger on a button, or a Twitter message - and turn it into an output - activating a motor, turning on an LED, publishing something online.

##### 5.2 Embedded C:

The Embedded C specification extends the C language to support freestanding embedded processors in exploiting the multiple address space functionality, user-defined named address spaces, and direct access to processor and I/O registers. These features are common for the small, embedded processors used in most consumer products. The features introduced by Embedded C, are fixed-point and saturated arithmetic, segmented memory spaces, and hardware I/O addressing. The description we present here addresses the extensions from a language-design perspective, as opposed to the programmer or processor architecture perspective.

#### VI. RESULTS & TALK

- **Energy Efficiency:** Reduce energy wastage by remotely controlling appliances to operate only when needed.
- **Enhanced Security:** Monitor and secure home remotely with features like door locks and camera surveillance.
- **Remote Accessibility:** Control home devices from anywhere via smartphone connectivity.
- **Assisted Living Support:** Provide unobtrusive monitoring for elderly or disabled individuals to maintain independence.
- **Data-driven Optimization:** Utilize collected data to optimize energy usage and improve overall home management.

#### VII. SUMMARY

The problem of crop destruction by wild animals has become a serious problem for the farmer. Effective solution and urgent attention is needed to solve this serious problem. To solve the problem of farmer we have designed a smart earlier detection and protection system with the help of IOT. As the detection of presence of animals near the forest boarder its very helpful to take early precautions.

**Automatic (Software) Reset** Rather than requiring a physical press of the reset button before an upload, the Arduino UNO is designed in a way that allows it to be reset by software running on a connected computer.

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