

LITERATURE SURVEY

1. SMART CROP PROTECTION SYSTEM FROM BIRDS AND ANIMALS (SHASHI KIRAN V, MANOJ N2, HEMANTH KUMAR M3, NAMITH M N4, Dr. SUREKHA MANOJ5)

Publication: International Journal of Creative Research Thoughts
(IJCRT)

Year:2022

This system assists us in keeping such wild animals away from farmlands while also providing surveillance functionality. This project is based on surveillance using an animal ward-off system in farmlands to prevent crop vandalism by wild animals. In addition to providing security, this system uses RFID tags to distinguish between an intruder and an authorized person, and various PIR sensors are placed throughout the area to detect any movement. The Raspberry Pi board is connected to all of the sensors and components. As a result, we developed a product that can be very useful for farmers; it prevents crop loss and increases yield while also protecting the farm from intruders. This is an Arduino-powered system. A motion sensor is used in this system to detect animals and birds in the field. In this case, the sensor instructs the Arduino to act. Here, we decided to monitor the animals and birds where the PIR sensor detects their presence. It is made up of a power supply section, a PIR sensor, an Arduino, a buzzer, and an LED. When animals and birds enter the farm area, PIR sensors are used to detect them. The Arduino board will immediately turn on, and the sound will be played to distract the animal. The LED will be turned on at night.

This device is powered by an Embedded PIC Microcontroller. It includes a PIR sensor, a PIEZO buzzer, a 12v adapter, and an LED. When animals

attack crops in an agricultural field, this system detects the sound produced by the buzzer and generates.

2. Smart crop protection system from wild animals and birds using IoT (*Global Academy of Technology, Bengaluru, Karnataka Harish.N. J*)

Publication: International Journal of Advance Research, Ideas and Innovations in Technology

Year:2021

Sensors are used to detect intrusion in the field and are connected to an Arduino uno. When the sensor inputs data, the Arduino Uno turns on the camera to capture the image and classify it using image processing to determine whether the animal is domestic or wild. The camera's input is processed. Convolution Neural Network is used to classify images. Identifying whether the animal is domestic or wild. Taking appropriate action based on the intruder after image processing and classification. If a wild animal is detected, the processor activates an alarm and sends an alert to the farmer. If animals or birds are detected during the process, an alarm or buzzer should be activated. If a domestic animal is detected, a notification will be sent to farmers via GSM module. If the detected animal is wild, a notification will be sent to both farmers and forest officers, along with the animal's GPS location. Notification will be sent to farmers and forest officials. A warning about the presence of animals is sent to the farmer. We use GSM/Wi-Fi Messenger to send notifications to farmers. A warning about the presence of animals is sent to the farmer.

3. Smart Intrusion Detection System for Crop Protection by using Arduino (Srushti Yadahalli EXTC Department)

Publication: Proceedings of the Second International Conference on Inventive Research in Computing Applications (ICIRCA-2020)

Year: 2020

Agriculture meets the population's food needs while also providing various raw materials to industries. Animal interference in agricultural lands results in massive crop losses. Crop damage caused by wild animal raiding has recently become a major source of concern. Animals such as wild boars, macaques, porcupines, deer, monkeys, and bears are extremely destructive and have occasionally resulted in human casualties. In villages, crop yield losses are high for potatoes and wheat. Small farmers lose up to 50% of their crop to wild animals and are unable to take harsh measures due to strict wildlife laws. Elephants are a highly conflict-prone wildlife species, particularly in India, so human-elephant conflict is on the rise. As a result, there is a need for a system that can assist farmers in driving away these animals as soon as they become aware of their presence. There are three levels of alerts in this system: low, moderate, and high, which allow the extent of danger posed by the intruder to be easily determined. The Passive Infrared (PIR) sensor is positioned in such a way that it provides a wider detection range. Thus, the novelty of the paper lies in the availability of a Thin Field Transistor (TFT) display that acts as a visual alarm that other villagers can see and use to protect the farm if the farmer is delayed in arriving. The TFT display's pixel control feature provides the benefit of clearer images as output.

4.Intelligent Crop Monitoring and Protection System in Agricultural fields Using IoT (Ramaprasad S Asst. Prof, Dept. of ECE)

Publication: International Conference on Recent Trends on Electronics, Information, Communication & Technology (RTEICT-2019), MAY 17th& 18th 2019

Year:2019

Authors have proposed numerous methodologies for utilizing WSN and electronics technologies in agriculture sectors to increase crop yields. Authors have also discussed hybrid networks, which include both terrestrial and underground wireless networks, which are very important to farmers. Karan Kansara and others the authors provided a detailed review of sensor-based irrigation systems that use microcontroller WSN technology. They also explained how to use water resources essentially for free by using moisture sensors. Author Narayut Putjaika created an intelligent and controlled farming using sensors, the Internet of Things (IoT), and an Arduino Microcontroller. Here authors have considered two set of sensors first set to monitor actual weather conditions and second set data from sensors kept in the pot, both data are used to predict weather conditions using decision tree. Kavita Bhole et al. Novelty of this paper is authors have used solar panels to generate required power supply to microcontrollers and other peripherals, also authors have used moisture sensors to measure the moisture level of soil based on the moisture level, and water pump will be turned on and off. Shweta B. Saraf et al. have used combination of WSN and actuator networks to collect the sensed data from the irrigation fields, authors used cloud computing technology to provide optimal usage of water and any or any nutrition to plants. M. Newlin Rajkumar et. Al Traditional farming consumes more water and results in water wastage. Moreover, in dry areas where there is inadequate rainfall, irrigation becomes difficult. Hence, we require an automatic system that will precisely monitor and control the water essential in the

field. Installing Smart irrigation system saves time and ensures judicious usage of water.

5. Protection of Crops from Wild Animals Using Intelligent Surveillance System

Publication: International Journal of Research in Advent Technology (IJRAT)

Year: 2018

To make the best use of mobile communication technology, the goals of this paper are to use the global system for mobile communication (GSM) and to provide short message service (SMS). This system assists us in keeping such wild animals away from farmlands while also providing surveillance functionality. It has been discovered that the odour of rotten eggs deters wild pigs and deer from destroying crops, so farmers manually spray the rotten egg solution on their fields, and firecrackers are used to deter wild elephants from destroying crops. This project is based on surveillance with an animal ward-off system used in farmlands to prevent crop vandalism by wild animals. In addition to providing protection, this system uses RFIDs to distinguish between an intruder and an authorized person. Various PIR sensors are deployed in the area to detect any motion and thus turns on a camera when movement is detected, providing real-time monitoring. It entails the automation of certain methods used to prevent wild animals from entering farmlands and destroying crops, such as an electronic fire cracker (for larger animals such as elephants) and rotten egg spray (for smaller animals such as wild pigs and deer). We also

use Haar feature based cascade classifiers for object detection to distinguish between the animal and human. When such intrusions occur, a message is automatically generated, and the cameras are turned on, capturing an image and beginning to record the video for some time, which is then stored on the SD card as well as on the cloud, i.e., Dropbox. The landowner can then view the video on any smart device and access it later. The Raspberry Pi board is connected to all of the sensors and components.