Literature Survey on IOT based Smart Crop Protection System For Agriculture

Journal Title	Author names	Description
Smart Crop Protection System	**Mohit Korche, Sartha Tokse, Shubham Shirbhate,Vaibhav Thakre , S. P. Jolhe**	In this proposed work, when the animal enters into the farm area the LDR's placed in the vertical positions help us to detect the size of the animal whereas PIR sensors are used to detect position of the animal. Immediately, the APR board will be on, and the sound is played to divert the animal. During night time the flash light will be on and the message will be sent to the farmer. The LCD displays the presence of animal and LDR readings. The GSM module is used for sending a message to warn the farmer about the intrusion. This device is using an Embedded PIC Microcontroller. It comprises LCD (16×2) (JHD162A), PIC Microcontroller, PIEZO Buzzer, GSM based SIM900A module, rheostat (10k), battery 9v, LED. Whenever there is an attack by animals on crops in an agricultural field, this system detects sound produced by buzzers and generates an SMS alert within seconds to the field owner. This device is based on motion detecting sensors and is developed especially for crop monitoring in agriculture fields, farms, wetlands, for-ests etc. GSM technology is used to send SMS alerts to user on mobile whenever there is fire broken out in the field. It will also generate buzzer sounds to alarm nearby people to take proper action to diminish crops protected by smart farming.
Crop Monitoring and Crop Protection Using IOT	**R.Prema, NagaSravanthi S,Lakshmi Priya V**	The main objective of this project was designed to detect the presence of animals and fires in the agricultural sector.This document introduces the IOT-based agricultural production system to stabilize the supply and demand of agricultural products while developing environmental sensors and the forecasting system for growth and production. quantity of crops by collecting their environmental information. This document designed the IOT-based monitoring system to analyze the growing environment. This document focuses primarily on farm monitoring and security. Therefore, this document has developed real-time monitoring of crop health in agriculture and updates the status of the cloud server. This app uses a fire sensor, gas sensor, motion sensor and LED and LDR for crop monitoring. Here they are using GSM

		technology to send SMS alert messages to the field owner
Elephant Intrusion Detection and Repulsive System	**N. Suganthi, N. Rajathi, Farithul Inzamam M**	Elephant intrusion causes a major problem like crop damage, human death and injuries. Mostly the elephants enter the agricultural land at night. Detecting elephant intrusion and driving it back is very difficult for the farmers because humans cannot watch full night. So, they developed a system which detects the elephant intrusion, creates an alert and repels the elephant away from human habitat. Elephant intrusion detection is useful to avoid human elephant conflict as they stray into agriculture areas searching for food, resulting in economic losses and in extreme cases human casualties.. Their Intrusion detection system detects the movement of the elephants using the vibration sensor. The vibration sensor senses the elephant's vibration and feeds it to the raspberry pi. When the vibration matches with the actual value range, the camera catches the elephant's image. Then image processing is done. The recorded image is compared with the images of the elephants that are stored already. This is done with the help of Google Image processing API. Once the image matches with the stored images, the alert message is sent to the forest department with the help of Google messaging API.
Automated Crop Field Surveillance Using Computer Vision	**Tejas Khare,Anuradha Phadke**	Farmers and crop field owners have been facing a problem of trespassing of wild animals for which no feasible solution has been provided. Installing a fence or barrier like structure is neither feasible nor efficient due to the large areas covered by the fields. Also, if the landowner can afford to build a wall or barrier, government policies for building walls are often very irksome. The paper intends to give a simple intelligible solution to the problem with Automated Crop Field Surveillance using Computer Vision. The solution will significantly reduce the cost of crops destroyed annually and completely automate the security of the field.This paper intends to solve the problem by placing long range cameras at the corners of the field or land while considering the maximum field of view of the camera. Speakers with an equal amount of distance between them are placed inside the field. The positions of the camera and the speakers are static. The video from the camera is captured and broken down into frames which are then sent sequentially to the object detection module. The time interval between the successive frames goes up

		to 1.5 seconds depending on the hardware acceleration.a 1.5 seconds lag would not significantly affect the efficiency of preventing the animals from entering the field. When an animal enters the field of view of the camera,the object detection module would first classify if it is a potential threat to the farm. If the animal is classified as a threat, the distance between the animal and the speakers inside the farm which are in the field of view is calculated to decide which speaker should make a sound, the speaker closest to the animal is identified by filtering the other speakers with a larger distance.
Smart Irrigation and Crop Protection from Wild Animals	**N.Penchalaiah , D.Pavithra , P.Bhargavi , D.P.Madhuri , K,Eliyas Shaik , S.Md.Sohaib**	The design proposed is an automatic system which assists the farmer in the irrigation process. It keeps alerting the farmer via an onboard LCD display and messages sent to the mobile of farmers. This project focuses on detecting wild animals along the farm's border and also saving water by switching on and off the motor based on soil moisture content. Here they use IR sensors to detect wild animals, soil moisture sensors to detect moisture content in the farm, some speakers to deliver some scary sounds so animals can be afraid to get into the field, and microcontrollers to collect sensor data. The microcontroller analyses the data and, based on that data, sends the signals to the speakers that it generates the sound to stop the animals from reaching the field and also sends the safety instructions to the cell phones of the nearest residents, farmers and the forest office. This will also send signals to turn on and off the motor based on the soil's moisture content through the soil moisture sensor information. The sensors capture the data and send it to the arduino then Aurdino and GSM collects the data from the sensors.they send those data to the cloud server. Server processes the data received from the arduino.Send the signals to the actuators, and mobiles of the users. Then the actuators perform the actions based on the data from the server
Automated Alert Fencing System Using Arduino and GSM SIM Module	**Dinesh Joshi , Prabhu Pant**	The objective of our project is to provide an automated system alert fencing system for warding off animals from farms using Arduino (microcontroller) and easy-to-use mobile application. The aim of our project is to minimize this manual intervention by farmers and save their time and resources using an automated alert fencing system.

		Furthermore, an automated voice call is made to the user cautioning him about the intrusion of the animals. The user can then decide whether to turn off the alarm system from the provided mobile app.Alarm system using Arduino and android mobile application is useful for farmers as it saves their time and resources. It provides useful warning regarding the intrusion of animals in their fields, thereby protecting the crops from possible hefty losses. It significantly reduces manual labor of watching the farms day and night. Furthermore, the mobile application brings out the possibility of accessing the system from any place at any time which is very important in this modern era of technology.