INTELLIGENT CROP MONITORING AND PROTECTION SYSTEM IN AGRICULTURAL FIELDS USING IOT

-Ramaprasad S S

The main component of this system is Arduino Uno. Aruino Here we are using various sensors such as soil moisture sensor, DHT11 sensor and IR sensor. Soil moisture sensor is used to measure the amount of water content in the soil. DHT11 sensor is used to measure the humidity and temperature of the of the field DHT11 sensor is a digital humidity and temperature sensor.IR sensor is used to give the intruder alarm to the farmer. Here we use the power supply from either service mains or from the solar plant. Solar plant is used to harness the solar energy in order to use it as backup to the electricity.The information from the various sensors is sent to the arduino. Arduino sends the control signal and commands to the GSM module and Wi-Fi module based on the information received from the sensors. GSM module (global system for mobile communication) is used to send the SMS to the farmer's mobile about the field conditions. Wi-Fi module is used to send the real time data of the field to the IoT which is a cloud platform. The data stored in the IoT is used for the research purposes. Relays are used to control the motor pumps. Motor pumps are used to pump water to the field from the tank and used to pump water from the field to tank. All the operations of the system are controlled by the arduino.

DEVELOPMENT OF IOT BASED SMART SECURITY AND MONITORING DEVICES FOR AGRICULTURE

-Tanmay Baranwal

In the proposed scenario, the research problem is to develop intelligent security systems with ability to analyze data and transmit information over network to the remote location. Literature survey gives the notion about present work done in field of agriculture security and IoT. This can be enhanced by integrating few new technologies with present scheme. Current IP based CCTV security cameras require network connectivity for monitoring from remote location. It doesn't has ability to notify user by analyzing data. In the device, basic sensors and electornic devices are used. The sensory information are analyzed in order to activate electronic devices and raspberry pi is used as a server to analyze data and transmit information to user.

IOT BASED CROP PROTECTION SYSTEM AGAINST BIRDS AND WILD ANIMAL ATTACKS

-P.Navaneetha

This is a microcontroller based system using PIC family microcontroller. This system uses a motion sensor to detect wild animals approaching near the field. In such a case the sensor signals the microcontroller to take action. Here, we decide to monitor the wild animals where the PIR sensor detects the presence of object and the camera starts capturing images. The type of animal is found by the use of image processing. If an animal is identified, then start producing sound at three different frequencies based on the type of animal detected. The microcontroller now sounds an alarm to woo the animals away from the field as well as sends SMS to the farmer so that he may know about the issue and come to the spot in case the animals don't turn away by the alarm. This ensures complete safety of crops from animals thus protecting the farmer's loss.

INTERNET-OF-THINGS (IOT) BASED SMART AGRICULTURE:TOWARDS MAKING THE FIELDS TALK

-Muhammad Ayaz

This article highlights the potential of wireless sensors and IoT in agriculture, as well as the challenges expected to be faced when integrating this technology with the traditional farming practices. IoT devices and communication techniques associated with wireless sensors encountered in agriculture applications are analyzed in detail. What sensors are available for specific agriculture application, like soil preparation, crop status, irrigation, insect and pest detection are listed. How this technology helping the growers throughout the crop stages, from sowing until harvesting, packing and transportation is explained. Furthermore, the use of unmanned aerial vehicles for crop surveillance and other favorable applications such as optimizing crop yield is considered in this article. State-of-the-art IoT-based architectures and platforms used in agriculture are also highlighted wherever suitable. Finally, based on this thorough review, we identify current and future trends of IoT in agriculture and highlight potential research challenges.

SMART IRRIGATION AND CROP PROTECTION FROM WILD ANIMALS

-N.Penchalaiah

Agricultural sector faces many problems nowadays due to a lack of water resources. Smart irrigation system has been used to help the farmers resolve the difficulties. Different sensors such as soil moisture, DHT11, PIR (intruder detection network) are connected to Arduino microcontroller's input pins within this device. The sensed sensor values are displayed in LCD. If the sensed value exceeds the threshold values set in the system, the relay circuit automatically switches the pump ON / OFF and it is connected to the driver circuit which helps to switch the voltage. The farmer will be intimated via GSM module about the current condition of the field. By using this device, the farmer can at any time access the details of the field condition anywhere. Animal detection system is designed to detect the presence of animal and offer a warning. In this project we used PIR and ultrasonic sensors to detect the movement of the animal and send signal to the controller. It diverts the animal by producing sound and signal further, this signal is transmitted to GSM and which gives an alert to farmers and forest department immediately. Arduino boards are able to read analog or digital input signals from different sensors and turn it into an output such as activating a motor, turning LED on/off, connect to the cloud and many other actions. We can control our board functions by sending a set of instructions to the microcontroller on the board via Arduino IDE. Here aurdino is used to collect the data from the sensors such PIR motion sensor, IR Sensor and Soil Moisture Sensor.

SMART CROP PROTECTION SYSTEM FROM ANIMALS AND FIRE USING ARDUINO

-Srikanth N

Here we propose automatic crop protection system from animals and fire. This is a arduino Uno based system using microcontroller. This system uses a motion sensor to detect wild animals approaching near the field and smoke sensor to detect the fire. In such a case the sensor signals the microcontroller to take action.The microcontroller now sounds an alarm to woo the animals away from the field as well as sends SMS to the farmer and makes call, so that farmer may know about the issue and come to the spot in case the animals don't turn away by the alarm. If there is a smoke, it immediately turns ON the motor. This ensures complete safety of crops from animals and from fire thus protecting the farmer's loss.

SMART AGRO USING ARDUINO AND GSM

-P.Rekha

The farmers working in the farm lands are solely dependent on the rains and bore wells for irrigation of the land. Even if the farm land has a water-pump, manual intervention by farmers is required to turn the pump on/off whenever needed and also the farmer need safety for their components and they need vegetable safety from wild animals. The aim of our project is to minimize this manual intervention by the farmer, which is why we are using a ARDUINO UNO. If the wild animals is entering inside the farm land means will be altered. So this project is very useful to modern agriculture.

A SMART CROP PROTECTION AGAINSTANIMALS ATTACK

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Mr.P.Venkateswara Rao

In this paper we proposed a method which could detect the presence of animal and offer a warning. In this project we used microcontroller and camera to detect the movement of animals send signal to the controller. It diverts the animal by producing sound and signal further, transmitted to GSM and which gives an alert to the owner of the crop immediately. The proposed monitoring scheme is to provide an early warning about possible intrusion and damage by animals.

SMART CROP PROTECTION SYSTEM FROM ANIMALS

-M. Jaya Prabha

An animal detection system has been designed to detect the presence of animals and it offres a warning and divert the animal without any harm. The designed system will continuously check for any animal to enter the field. IR sensors and ultrasonic sensor are used in this project to detect animal movement and to give a signal to the controller. Further the animals are being divereted by generating sound and signals, and this signal is being transmitted to GSM and instantly give farmers warning, so the farmers will be aware of the difficulty and available to the spot just in case the animals do not show off by the alarm. The complete safety of crops was ensured by this system from animals thus protecting the farmer's loss.

IOT BASED AGRI SOIL MAINTENANCE THROUGH MICRO-NUTRIENTS AND PROTECTION OF CROPS FROM EXCESS WATER

-**Dr. Ayyasamy S**

Our objective with this proposal is to manage the excess water log in the farmland and analyse the availability of micronutrients using IoT. This water managing system is semi-automated in which the system can work on its own or be controlled using a mobile application. Using the DHT sensor readings, the weather at that specific location can be analysed and it can be predicted for the next 10 days with the use of a prediction algorithm. IoT is the concept of connecting all the devices to the Internet and allowing them to communicate with each other over the internet. IoT is a huge network of connected devices – all of which gather and share data about how they are used and the environments in which they are operated. IoT is an application of modern Information and Communication Technologies into agriculture. Sensors are used to build a crop monitoring system. This can be monitored using a mobile application. The application is used to monitor and control the motor switch.