

NALAIYA THIRAN

USER CASE: CROP PROTECTION USING IOT

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LITERATURE SURVEY:

IOT BASED AUTOMATED CROP PROTECTION SYSTEM

Low productivity of crops is one of the main problems faced by the farmers in our country. This can be because of two main reasons. Crops destroyed by wild animals and because of bad weather condition. This paper provides a solution to the destruction of crops by animals. This system will provide a complete technical solution using the Internet of things (IOT) to the farmers to prevent their crops from wild animals and provide information to the farmers to maximize their production. Animals are detected using PIR sensors and cameras where animals are identified using Tensor Flow image processing Techniques. Raspberry PI is used as the processing unit of the system and sound buzzers are used to emit the ultrasound frequencies.

IOT SOLUTIONS FOR CROP PROTECTION AGAINST WILD ANIMAL ATTACKS

Technology plays a central role in our everyday life. There has been a surge in the demand of Internet of Things (IOT) in many sectors, which has drawn significant research attention from both the academia and the industry. In the agriculture sector alone, the deployment of IOT has led to smart farming, precision agriculture, just to mention a few. This paper presents the development of Internet of Things application for crop protection to prevent animal intrusions in the crop

field. A repelling and a monitoring system is provided to prevent potential damages in Agriculture, both from wild animal attacks and weather conditions.

APPLICATION OF IOT AND MACHINE LEARNING IN CROP PROTECTION AGAINST ANIMAL INTRUSION

Animal intrusion is a major threat to the productivity of the crops, which affects food security and reduces the profit to the farmers. This proposed model presents the development of the Internet of Things and Machine learning technique-based solutions to overcome this problem. Raspberry Pi runs the machine algorithm, which is interfaced with the ESP8266 Wireless Fidelity module, Pi Camera, Buzzer, and LED. Machine learning algorithms like Region-based Convolutional Neural Network and Single Shot Detection technology plays an important role to detect the object in the images and classify the animals. The experimentation reveals that the Single Shot Detection algorithm outperforms than Region-based Convolutional Neural Network algorithm. Finally, the Twilit API interfaced software decimates the information to the farmers to take decisive action in their farm field.

CROP MONITORING AND CROP PROTECTION USING IOT

Much research and numerous attempts have been made to apply the new IOT technology to agricultural areas. The main objective of this project was designed to detect the presence of animals and fires in the agricultural sector. However, the IOT for agriculture should be considered differently than in the same areas, such as industrial etc. 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. Supervision and control of the agricultural environment plays an important role in the production and management of agriculture. 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 fire sensor, gas sensor, motion sensor and LED and LDR for crop monitoring. Here we are using GSM technology to send SMS alert messages to the field owner about the culture environment.

IOT BASED SMART CROP PROTECTION AND IRRIGATION SYSTEM

This will be an integrative approach in the field of IIOT designed for perceptive Agriculture which is preceding the arrangements in course of open source and on low powers devices. This project work is to yield monitoring arrangement for farm safety against animal attacks and climate change conditions. Industrial Internet of Things (IOT) advances is frequently used in smart farming to emphasize the standard of agriculture . This project work contains various sorts of sensors, controllers in addition to positioner on behalf of WSN and ARM Cortex-A board which consumes 700mA or 3W power is the main temperament of the classification. Different sensors like DHT 11 Humidity & Temperature Sensor, PIR Sensor, LDR sensor, HC-SR04 Ultrasonic Sensor and cameras are interfaced with the board. IOT devices stay adept of in case evidence around farming grounds. As soon as the passive infrared sensors (PIR) go High on detecting the motion within a range of 10 meters, the camera will be turned ON which first captures an image and then starts dealing out the image, which will be warehoused onboard as well as in IOT cloud, instantaneously a message will be generated automatically towards the recorded quantity using a SIM900A module to inform about the intrusion with the data of the temperature as well as humidity obtained by dht11 which is a temperature and humidity sensor . If found not to be human after processing the available information the system elevate an buzzer sound, to notify people about the intrusion. Data collected by the sensors will be given to ARM Cortex-A through the systems which can be wired or communication system. The facts in the porter is tested and harmonized with superlative values of data like value of temperature, humidity and soil moisture. If the difference occurred concerning predefined threshold rate formerly announcement sends to the mobile of the farmer or to the website. The result will be generated arranged the database of the farmer's mobile to take the necessary action.