IBM NALAIYA THIRAN

LITERATURE SURVEY

Title : IoT based smart crop protection system for agriculture

Domain Name : Internet of Things

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ABSTRACT:

Technology plays central role in our everyday life. Agriculture is a major source of food production in our country. Growth in population increase the demand for food production and agriculture is the main source. Irrigation in agriculture is an important process that affects the development of crops. 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. In particular, farmers visit their agricultural fields regularly to check the level of soil moisture and water is pumped by motors to irrigate their respective fields on the basis of requirements. This study presents a survey of IoT solutions and demonstrates how IoT can be integrated to the smart agriculture sector for irrigating systems.

INTRODUCTION:

In the field of agriculture, the crop yield is getting reduced by the wild animals attacks. The important thing is to prevent the animals which moves from the forest into the agricultural land, has become one of the rising factor that affects agriculture. Sometimes people also lost their lives while they try to banish the animals out of their place. The animals enter into the agricultural land because of the lack of water resources in the forest areas and deforestation. To improve agriculture as the survival of the fittest, wild animals that enter into the Agricultural land can be monitored and a repeller device is used to produce the ultrasound that irritates the animals and redirect them. Along with this Raspberry Pi, PIR and Ultrasonic sensors are used to detect the movement, capture the image of the animal and send signal to the controller. Arduino is an open source computer hardware and software company, project, and user community that designs and manufactures single-board microcontrollers and microcontroller kits for building digital devices and interactive objects that can sense and control objects in the physical world. When Sensor inputs the data Arduino turns on the camera to capture the image from camera classifying them using image processing to identify whether the animal is domestic or wild.

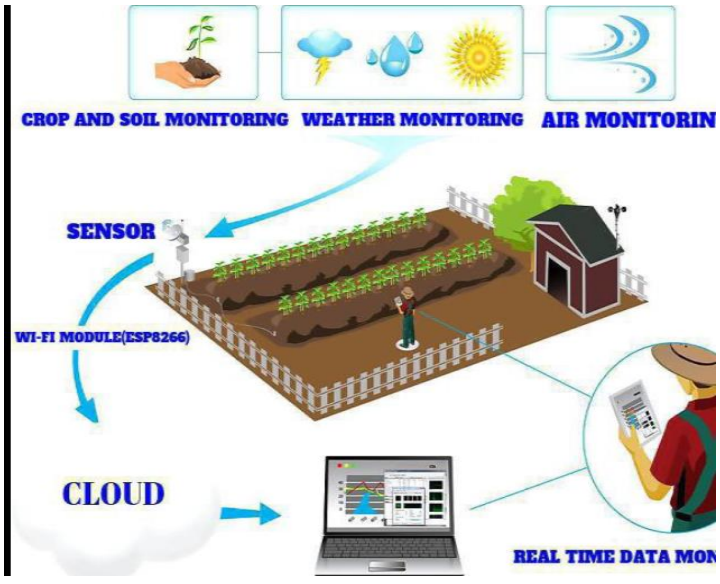

Fig1.AUTOMATION IN AGRICULTURE

LITERATURE SURVEY:

solutions based 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.

Smart crop protection system with image capture over IoT:

The problem of wild animal attacks on crop fields i.e. crop vandalization is becoming a very common phenomenon in the state of Himachal Pradesh, Punjab, Haryana and many other states. Wild animals like monkeys, estray animals especially cows and buffaloes, wild dogs, nilgais, bisons, elephants deer, wild pigs and even birds like parakeets cause a lot of damage to crops either by running over them or eating them and vandalizing them completely. This leads to poor yield of crops. These animals attack on fruit orchards and destroy the flowerings and fruits. In both cases, this leads to significant financial loss to the farmers and orchard owners. The problem is so pronounced that sometimes farmers decide to leave the area barren due to these animal attacks.

Smart crop irrigation system with using RASPBERRY-Pi over IoT:

Chandankumar Sahu et. implemented the system in which RASPBERRY-Pi is used for control the irrigation system and connects with internet to send data to the registered mobile number. Automatic message sending is developed using python programming in raspberry-pi. By using the automatic irrigation system it optimizes the usage of water by reducing wastage and reduces the human intervention for farmers. It saves energy also due to the automated controlling system. Automation in irrigation system makes farmer work much easier. Sensor based automated irrigation system provides promising solution to farmers where presence of farmer in field is not compulsory.

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