IBM Team 13

Smartfarmer-IOT Enabled Smart Farming Application

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LITERATURE SURVEY

PAPER 1: SMART AGRICULTURE USING IoT

PUBLICATION: Journal of Emerging Technologies and Innovative Research (Jayakumar R, Karthikeyan S N, Naveen Perumal M, Naveen Perumal M)

YEAR:2019

This project is to improve the crop yield and thereby meet the demand. This project remotely measures and monitor water moisture levels in the soil to ensure that crops are getting optimal water resources and automatically trigger sprinkler systems to address low moisture levels in the soil to prevent crop from damage or loss. This idea is proved that it will improve the crop yield and manage them. Over 58% of the rural households depend on agriculture as their principal means of livelihood. This project can be used in various other ways, due to its cheap and cost efficient design. It can be used as a home automation controller, by adding a few more 240volt relays. It can remotely perform jobs. Thus the smart agriculture using IoT will revolutionized the world of farming and it will increase the productivity as well as improve the quality and can save lives of farmer.

PAPER 2: Smart Agriculture System using IoT Technology
PUBLICATION: International Journal of Advance Reasearch in Science and Engineering (Adithya Vadapalli , Swapna Peravali & Venkata Rao Dadi)
YEAR: 2020

This project enable to check the quality of the soil and the growth of the crop in soil and with these project farmers are able to solve irrigation problems, temperature problems, humidity problems, etc. The availability of sensors for the agricultural parameters and microcontrollers can be easily interfaced with each other and with the help of Internet of Things, wireless sensor networks communication the challenges encountered by the farmers can also be reduced and a better communication path for the transfer of useful data can be achieved between various nodes. So, farmers are able to control various equipment's related to agricultural and cover their crop on Smartphone or on computers. This project offer a high application area to the users to improve their skill and output of the crops in better way. Use this project help to increase the Rice, maize and wheat and other agrarian product in India in the near future.

PAPER 3 Smart Farming Using IOT
PUBLICATION: INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH IN TECHNOLOGY (CH Nishanthi , Dekonda Naveen , Chiramdasu Sai Ram , Kommineni Divya , Rachuri Ajay Kumar)
YEAR: 2020

The primary purpose of the project is to maintain the ideal environment for the growth of crops. By using IoT, we can increase the crop yield in agriculture farms. With this IoT platform, we can monitor the weather conditions like Humidity and Temperature. We can also change the essentials required to the farm; the dampness and dryness of the soil can be observed through this. Using an IR sensor, we can detect the pest and humans by their movement in the field. The availability of sensors and microcontrollers interfaced with each other with the help of IoT and wireless communication between the sensors. This can reduce the challenges of the farmer which are faced by the weather. So, farmers can monitor the conditions of the farm through mobile or computers. This project offer excellent crop yielding and produce better output results. Use this project to increase the excellent crop yield in agricultural production in India. IOT capable of controlling the condition of the yield and growth. It can also reduce the labour work on the farm.

PAPER 4 : IOT BASED SMART FARMING SYSTEM
PUBLICATION: Journal of Emerging Technologies and Innovative Research (Akshay Atole, Apurva Asmar, Amar Biradar, Nikhil Kothawade, Sambhaji Sarode , Rajendra G. Khope)
YEAR: 2020

Agriculture is the primary occupation in developing country like India.47% of the people are involved in the agriculture sector.18% of the total GDP of India is contributed by agricultural sector in 2012. Smart Farming System is proposed in this paper which will use concept of IOT, WSN and cloud computing to help farmer plan a irrigation schedule for his farm. Irrigation and fertilization is very important in farming which has to be closely monitored. IoT based smart farming system can be very helpful for farmers where it can prevent less irrigation which is not good for farming. Threshold values for climatic conditions like humidity, temperature, moisture can be fixed based on the environmental conditions of that particular region. This project generates irrigation schedule based on the sensed real time data from field and data from the weather repository. This project can recommend farmer whether or not, is there a need for irrigation.

PAPER 5: IOT BASED SMART FARMING SYSTEM
PUBLICATION: International Advanced Research Journal in Science, Engineering and Technology (Divy Mehta , Pooja Bhatt , Shivang Thakker , Gaurang Dalvadi , M.V. Patel)
YEAR: 2020

In this project of smart farming, there is one controller which is stated at the farm area which is connected to internet and continuously sending data to cloud and by the cloud platform or local area network, farmers can monitor regularly and control the corps. We have used different sensors which can sense the different parameters in the field and on basis of sensed parameters of sensors the controller will take respective action. The sensed values of sensors and the parameters are monitored by using local network or cloud computing. On the basis of Live Data Monitoring and Weather Forecasting the farmers may access the updates of motor and other sensors as per the requirements. This project is integrated with Arduino technology, different sensors, Live data feed and weather forecasting using local area network and cloud computing. The farmer can view every information about the actions of system at any time from anywhere. This system is accurate and efficient in fetching these live data. This system helps the farmers to increase the crop production by taking proper care on crops.

PAPER 6: A Smart Farming and "Crop Monitoring Technology" in Agriculture Using IOT.
PUBLICATION: International Journal For Research IN Applied science & Engineering technology (Raj Aryan, Ankur Mishra, Sachin kumar, Ms.Sonia Kumari)
YEAR:2022

In this project user can monitor and manage the system remotely with the help of an app that provides a visual web connection to the user. The IoT Based Smart Agriculture Monitoring System improves various features such as sensitivity to humidity and temperature, protection, GPS-based remote-control monitoring, proper watering resources, panic attack, and leaf moisture. Temperature and Moisture created in the agricultural field is monitored through a sensor using the CC3200 Single chip. The CC3200 is connected to camera the to take pictures and transfer those pictures via MMS for the farmers using Wi-Fi. This paper describes an automated irrigation system that uses IoT. In this project these plans are used to increase the excellent crop yields agricultural production in India. In this IoT project, farmers can control the crop yield and its growth. It can also reduce farm worker's work.

PAPER 7: IoT Based Smart Agriculture Monitoring System
PUBLICATION: International Journal of Scientific Engineering and Research (Harika Pendyala , Ganesh Kumar Rodda , Anooja Mamidi , Madhavi Vangala, Sathyam Bonala , Keerti Kumar Korlapati)
YEAR:2021

An IOT Based Crop-field monitoring system and irrigation automation system helps in way how to monitor a crop field remotely. The farmer can control and monitor the crops through system remotely with the help of application which provides a web interface to the farmers. This project is developed by using sensors and according to the decision from a server based on sensed data, the irrigation system is automated. It aims at making the advancement in agriculture sector using automation and IoT technologies. The project focuses on developing devices and tool to manage, display and alert the users using the advantages of a wireless sensor network system. The cloud computing devices are used in this system that can create a whole computing system from sensors to tools that collects data from agriculture land. This proposes a new methodology for smart farming by including a smart sensing system and smart irrigation system through wireless communication technology. This project is cheap at cost for installation. Here one can access and also control the agriculture system in laptop, cell phone or a computer.