LITERATURE SURVEY

SMART FARMER - IOT-BASED SMART FARMING APPLICATION

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INTRODUCTION:

Our literature survey contains some recent research work related to the implementation of Smart Farming Systems in agriculture. Some of them have used AI techniques to enhance the prediction aspect. The majority of the earlier irrigation systems do not consider weather forecasting information (e.g., precipitation) while making irrigation decisions. It leads to a wastage of fresh water, energy, and loss of crop growth when rain is followed immediately by the watering of the crop. To handle such cases, IoT-based Smart Farming solutions can provide better decision support for irrigation by utilizing weather parameters information (e.g., precipitation). The Smart Farming System also allows us to conserve water using remote water level indicators, so that water would not be used in excess.

PROPOSED SOLUTIONS AND THEIR OBJECTIVES:

A. SMART AGRICULTURE USING IOT

Author: Jayakumar R, Karthikeyan S N, Naveen Perumal M, Methini M

Published Year: June, 2019

The main objective of 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 damage or loss. This idea will improve the crop yield and manage them.

B. RESEARCH PAPER ON SMART AGRICULTURE USING IOT

Author: Ritika Srivastava, Vandana Sharma, Vishal Jaiswal, Sumit Raj

Published Year: July, 2020

This paper proposes a system which can monitor temperature, level of water, moisture and even the movement, if any, happens in the field which may destroy the crops in agricultural field through sensors using Arduino UNO board. Smart agriculture is an emerging concept, because IOT sensors are capable of providing information about agriculture fields and then act upon based on the user input. The project aims at making use of evolving technology i.e., IOT and smart agriculture using automation. Once hardware has been developed depending on the change in requirements and technology the software needs the updating.

C. SMART AGRICULTURE: IOT BASED SMART SENSORS AGRICULTURE

Author: Anand Nayyar and Er. Vikram Puri

Published Year: November, 2016

This paper describes Internet of Things (IOT) technology has brought revolution to each and every field of common man's life by making everything smart and intelligent. IOT refers to a network of things which make a self-configuring network. The development of Intelligent Smart Farming IOT based devices is day by day turning the face of agriculture production by not only enhancing it but also making it cost-effective and reducing wastage. The aim / objective of this paper is to propose a Novel Smart IOT based Agriculture assisting farmers in getting Live Data (Temperature, Soil Moisture) for efficient environment monitoring which will enable them to do smart farming and increase their overall yield and quality of products.

D. SMART FARMING SYSTEM USING DATA MINING

Author: Priyanka P.Chandak, Dr. A. J. Agrawal

Published Year: 2017

This paper proposes a smart farming system which provides better solution to farmers for high yield. In this system all 3 main modules i.e., Irrigation, Fertilizer and pesticide modules are integrated. Smart farming system is a web application with huge amount of dataset available in backend. The data mining is used in the process of finding correlations or patterns among the dozens of fields in relational databases. Clustering algorithm is used. Clustering is the process which partitions given data set into homogeneous group based on similarities and dissimilarity. Initially farmer have to send soil for testing and feed the soil testing report details (which include nitrogen, potassium, phosphorus, calcium, magnesium, etc.) in application. These details are necessary for prediction of water required, fertilizer and pesticides. Also, for the first time, it has to save the exact location of farm so that the longitude and latitude of farm is identified which is useful to get the exact temperature of farm location. Temperature of farm location is identified from satellite and online whether forecasting sources. We need to insert initial crop information such as crop name, crop stage, soil condition, etc.

E. IOT-BASED ON SMART AGRICULTURE

Author: Mr.N.Sivakumar, Mr.P.Thiyagarajan, Ms.R.Sandhiya

Published Year: April, 2018

This paper is proposed for the IoT-based Smart Agriculture system which is to be used by farmers in their agricultural lands. This system monitors and maintains the desired soil moisture content via automatic water supply. The system gets information about environmental conditions such as light, dust, humidity or sudden changes in temperature. The setup uses soil moisture sensors which measure the exact moisture level in soil. The value active the systems to use appropriate quantity of water avoids over/under irrigation. Usually, the farmer pumps the water more or less to cultivate the land. This may result in wastage of water or insufficiency to the crops. The motion sensors in this system will send alert SMS/Text messages. These alert messages will be sent to farmer’s phone when the sensors detect motion. This model sends an alert message whenever the moisture level increases or decreases in the field.

INFERENCE FROM LITERATURE SURVEY:

PROJECT NAME	*INFERENCE*
SMART AGRICULTURE USING IOT	Remote measurement and monitoring of water moisture levels in the soil. Automatic trigger sprinkler systems to address low moisture levels in the soil.
RESEARCH PAPER ON SMART AGRICULTURE USING IOT	Uses Arduino UNO board to monitor temperature, level of water, moisture and even the movement of water, if any.
SMART AGRICULTURE: IOT BASED SMART SENSORS AGRICULTURE	Smart IOT based Agriculture assisting farmers in getting Live Data (Temperature, Soil Moisture) for efficient environment monitoring.
SMART FARMING SYSTEM USING DATA MINING	Use of data mining to analyse similar patterns among dozens of fields in relational databases. Location and initial crop information should be provided for the first time. Using the information the weather condition of the location can be acquired.
IOT-BASED ON SMART AGRICULTURE	Monitors and maintains the desired soil moisture content via automatic water supply. The system gets information about environmental conditions such as light, dust, humidity or sudden changes in temperature. Sends alert message when the moisture level increases or decreases in the field.