Literature Survey

Smart Farmers-IOT Based Smart Farming

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Smart Farming using IoT, a solution for optimally monitoring farming conditions

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The 3rd International workshop on Recent advances on Internet of Things: Technology and Application Approaches (IoT-T&A 2019) November 4-7, 2019, Coimbra, Portugal

Abstract:

The aim is to propose a technology which can generate messages on different platforms to notify farmers. The product will assist farmers by getting live data (Temperature, humidity, soil moisture, UV index, IR) from the farmland to take necessary steps to enable them to do smart farming by also increasing their crop yields and saving resources (water, fertilizers). The product proposed in this paper uses ESP32s Node MCU, breadboard, DHT11 Temperature and Humidity Sensor, Soil Moisture Sensor, SI1145 Digital UV Index / IR / Visible Light Sensor, Jumper wires, LEDs and live data feed can be monitored on serial monitor and Blynk mobile. This will allow farmer to manage their crop with new age in farming

IOT Based Smart Agriculture System

G. Sushanth; S. Sujatha

Published in: 2018 International Conference on Wireless Communications, Signal Processing and Networking (WiSPNET)
Date of Conference: 22-24 March 2018

it is proposed to develop a Smart agriculture System that uses advantages of cutting edge technologies such as Arduino, IOT and Wireless Sensor Network. The paper aims at making use of evolving technology i.e. IOT and smart agriculture using automation. Monitoring environmental conditions is the major factor to improve yield of the efficient crops. The feature of this paper includes development of a system which can monitor temperature, humidity, moisture and even the movement of animals which may destroy the crops in agricultural field through sensors using Arduino board and in case of any discrepancy send a SMS notification as well as a notification on the application developed for the same to the farmer's smartphone using Wi-Fi/3G/4G. The system has a duplex communication link based on a cellular-Internet interface that allows for data inspection and irrigation scheduling to be programmed through an android application. Because of its energy autonomy and low cost, the system has the potential to be useful in water limited geographically isolated areas.

Design and implementation of a connected farm for smart farming system

Minwoo Ryu; Jaeseok Yun; Ting Miao; Il-Yeup Ahn; Sung-Chan Choi; Jaeho Kim

Published in: 2015 IEEE SENSORS
Date of Conference: 01-04 November 2015

Abstract:
Agriculture has been one of the most important industries in human history since it provides humans with absolutely indispensable resources such as food, fiber, and energy. The agriculture industry could be further developed by employing new technologies, in particular, the Internet of Things (IoT). In this paper, we present a connected farm based on IoT systems, which aims to provide smart farming systems for end users. A detailed design and implementation for connected farms are illustrated, and its advantages are explained with service scenarios compared to previous smart farms. We hope this work will show the power of IoT as a disruptive technology helping across multi industries including agriculture.

IOT Based Monitoring System in Smart Agriculture

S. R. Prathibha; Anupama Hongal; M. P. Jyothi
Published in: 2017 International Conference on Recent Advances in Electronics and Communication Technology (ICRAECT)
Abstract:
Internet of Things (IoT) plays a crucial role in smart agriculture. Smart farming is an emerging concept, because IoT sensors capable of providing information about their agriculture fields. The paper aims making use of evolving technology i.e. IoT and smart agriculture using automation. Monitoring environmental factors is the major factor to improve the yield of the efficient crops. The feature of this paper includes monitoring temperature and humidity in agricultural field through sensors using CC3200 single chip. Camera is interfaced with CC3200 to capture images and send that pictures through MMS to farmers mobile using Wi-Fi.

IOT Based Smart Agriculture Monitoring System

Dr.N.Suma,Sandra Rhea Samson,S.Saranya, G.Shanmugapriya, R.Subhashri

International Journal on Recent and Innovation Trends in Computing and Communication

Abstract:- Agriculture is the primary occupation in our country for ages. But now due to migration of people from rural to urban there is hindrance in agriculture. So to overcome this problem we go for smart agriculture techniques using IoT. This project includes various features like GPS based remote controlled monitoring, moisture & temperature sensing, intruders scaring, security, leaf wetness and proper irrigation facilities. It makes use of wireless sensor networks for noting the soil properties and environmental factors continuously. Various sensor nodes are deployed at different locations in the farm. Controlling these parameters are through any remote device or internet services and the operations are performed by interfacing sensors, Wi-Fi, camera with microcontroller. This concept is created as a product and given to the farmer's welfare.

IoT based Smart Agriculture

Nikesh Gondchawar, Prof. Dr. R. S. Kawitkar

International Journal of Advanced Research in Computer and Communication Engineering

Abstract: Agriculture plays vital role in the development of agricultural country. In India about 70% of population depends upon farming and one third of the nation's capital comes from farming. Issues concerning agriculture have been always hindering the development of the country. The only solution to this problem is smart agriculture by modernizing the current traditional methods of agriculture. Hence the project aims at making agriculture smart using automation and IoT technologies. The highlighting features of this project includes smart GPS based remote controlled robot to perform tasks like weeding, spraying, moisture sensing, bird and animal scaring, keeping vigilance, etc. Secondly it includes smart irrigation with smart control and intelligent decision making based on accurate real time field data. Thirdly, smart warehouse management which includes temperature maintenance, humidity maintenance and theft

detection in the warehouse. Controlling of all these operations will be through any remote smart device or computer connected to Internet and the operations will be performed by interfacing sensors, Wi-Fi or ZigBee modules, camera and actuators with micro-controller and raspberry pi

IoT Based Intelligent Agriculture Field Monitoring System

Md AshifuddinMondal; Zeenat Rehena

Published in: 2018 8th International Conference on Cloud Computing, Data Science & Engineering (Confluence)

Abstract:
Agriculture is becoming an important growing sector throughout the world due to increasing population. Major challenge in agriculture sector is to improve farm productivity and quality of farming without continuous manual monitoring to meet the rapidly growing demand for food. Apart from increasing population, the climate change is also a big concern in agricultural sector. The purpose of this research work is to propose a smart farming method based on Internet of Things (IoT) to deal with the adverse situations. The smart farming can be adopted which offer high precision crop control, collection of useful data and automated farming technique. This work presents an intelligent agriculture field monitoring system which monitors soil humidity and temperature. After processing the sensed data it takes necessary action based on these values without human intervention. Here temperature and moisture of the soil are measured and these sensed values are stored in ThingSpeak [11] cloud for future data analysis.

IoT-Enabled Smart Agriculture: Architecture, Applications, and Challenges

Vu Khanh Quy , Nguyen Van Hau , Dang Van Anh , Nguyen Minh Quy , Nguyen Tien Ban , Stefania Lanza , Giovanni Randazzo and Anselme Muzirafuti

Abstract

: The growth of the global population coupled with a decline in natural resources, farmland, and the increase in unpredictable environmental conditions leads to food security is becoming a major concern for all nations worldwide. These problems are motivators that are driving the agricultural industry to transition to smart agriculture with the application of the Internet of Things (IoT) and big data solutions to improve operational efficiency and productivity. The IoT integrates a series of existing state-of-the-art solutions and technologies, such as wireless sensor networks, cognitive radio ad hoc networks, cloud computing, big data, and end-user applications. This study presents a survey of IoT solutions and demonstrates how IoT can be integrated into the smart agriculture sector. To achieve this objective, we discuss the vision of IoT-enabled smart agriculture ecosystems by evaluating their architecture (IoT devices, communication technologies, big data storage, and processing), their applications, and research timeline. In addition, we discuss trends and opportunities of IoT applications for smart agriculture and also indicate the open issues and challenges of IoT application in smart agriculture. We hope that the findings of this study will constitute important guidelines in research and promotion of IoT solutions aiming to improve the productivity and quality of the agriculture sector as well as facilitating the transition towards a future sustainable environment with an agroecological approach

IoT based Smart Farming System

Akshay Atole, Amar Biradar, Apurva Asmar, Nikhil Kothawade, Sambhaji Sarode
"IoT based Smart Farming System", International Journal of Emerging Technologies and Innovative Research (www.jetir.org), ISSN:2349-5162, Vol.4, Issue 4, page no.29-31, April-2017, Available :http://www.jetir.org/papers/JETIR1704008.pdf

Abstract

Farming is a major input sector for economic development of any country. Livelihood of majority of population of the country like India depends on agriculture. In this project, it is proposed to develop a Smart Farming System that uses advantages of cutting-edge technologies such as IoT, Wireless Sensor Network and Cloud computing to help farmers enhance the way farming is done. Using sensors like temperature, humidity, moisture etc. are used to get information about the field and help farmers to take precise decisions on insights and recommendations based on the collected data.

IoT based Smart Agriculture Monitoring System

Published August 25, 2021

Ashish Choudhary

In this project, we are going to build a **Smart Farming System using IoT**. The objective of this project is to offer assistance to farmers in getting Live Data (Temperature, Humidity, Soil Moisture, Soil Temperature) for efficient environment monitoring which will enable them to increase their overall yield and quality of products. This smart agriculture using IoT system powered by NodeMCU consists of a DHT11 sensor, Moisture sensor, DS18B20 Sensor Probe, LDR, Water Pump, and 12V led strip. When the IoT-based agriculture monitoring system starts, it checks the Soil moisture, temperature, humidity, and soil temperature. It then sends this data to the IoT cloud for live monitoring. If the soil moisture goes below a certain level, it automatically starts the water pump. We previously build Automatic Plant Irrigation System which sends alerts on mobile but doesn't monitor other parameters. Apart from this, Rain alarm and soil moisture detector circuit can also be helpful in building Smart Agriculture Monitoring System.

Smart Farming: The Future of Agriculture

By SciForce June 202

"Smart farming" is an emerging concept that refers to managing farms using technologies like IoT, robotics, drones and AI to increase the quantity and quality of products while optimizing the human labor required by production.

Reference: Smart Farming: The Future of Agriculture (iotforall.com)