LITERATURE SURVEY

Smart Farmer - IoT Enabled Smart Farming Application

1. **Sreenivas Pakyala, Chandra kiran Viswanath Balusu, Ashish Teja Motupalli, Prof. Sundar S, "Smart Agriculture using IoT and Machine Learning", 2021.**

   The main aim of this paper is to gather important data from the farm like the moisture content in the soil, temperature in the farm and humidity. By developing some machine learning models which can predict whether farm needs watering based on all these soil parameters, we can reduce the amount the water wastage. Rainfall predicting models have been developed which can assist farmers in deciding the type of crops they can grow and also providing them with a good surveillance system of the farm and to use all these systems, a telegram bot user interface has been created so the farmers can handle all these operations wirelessly.

2. **Zuraida Muhammad, Muhammad Azri Asyraf Mohd Hafez, Nor Adni Mat, "Smart Agriculture Using Internet of Things with Raspberry Pi", 2020.**

   In this paper, Smart agriculture using IoT is implemented by using sensors like soil moisture sensor and DHT 11 to get temperature and humidity. Here the collected values are sent to cloud like thingspeak and they retrieve the data from the cloud. A threshold value is already set for the soil content in the soil and accordingly when the moisture reduces below the threshold value then the raspberry pi turns on the motor and waters the farm. There is no machine learning models involved and only works based on the threshold values. This project helps in reducing the water wastage in the farm to a certain level. This doesn't take the weather conditions of the area into consideration.

3. **Shrihari M, "A Smart Wireless System to Automate Production of Crops and Stop Intrusion Using Deep Learning", 2020.**

   This paper describes a method that uses a custom-built mathematical model to handle data from wireless sensors on Google Cloud, resulting in a smart system. An IoT - enabled design that can scale up to big farms. According to

Holistic Agricultural Studies, around 35 have been damaged by animals and people. This intelligent system uses Tensor flow and deep learning neural networks to recognise animals depending on their threat level, as well as human intruders who are not authorised on the farm, and to alert the farmer immediately. An android application is included with the device, which allows for remote access and surveillance through live video streaming.

4. **K. A. Patil and N. R. Kale, "A model for smart agriculture using IoT", 2019.**

   In this paper, sensor technology and wireless networks integration of IOT technology has been studied and reviewed based on the actual situation of agricultural system. A combined approach with internet and wireless communications, Remote Monitoring System (RMS) is proposed. Major objective is to collect real time data of agriculture production environment that provides easy access for agricultural facilities such as alerts through Short Messaging Service (SMS) and advices on weather pattern, crops etc.

5. **Anushree Math, Layak Ali, Pruthviraj U, "Development of Smart Drip Irrigation System Using IoT", 2018.**

   This paper aims to water the plants on the National Institute of Technology Karnataka campus with a smart drip irrigation system. To do this, the open source platform is used as the system's fundamental controller. Various sensors have been employed to supply the current parameters of components that impact plant healthiness on a continual basis. By controlling a solenoid valve, water is provided to the plants at regular intervals depending on the information acquired from the RTC module. The webpage may be used to monitor and manage the complete irrigation system. This website contains a function that allows you to manually or automatically control plant watering. The health of the plants is monitored using a Raspberry Pi camera that gives live streaming to the webpage. The controller receives water flow data from the water flow sensor through a wireless network. The controller analyses this data to see if there are any leaks in the pipe. Forecasting the weather is also done to restrict the quantity of water given, making it more predictable and efficient.

6. **Dweepayan Mishra, Arzeena Khan, Rajeev Tiwari, Shuchi Upadhay, "Automated Irrigation System - IoT Based Approach", 2018.**

   Agriculture is a substantial source of revenue for Indians and has a huge impact on the Indian economy. Crop development is essential for enhanced yield and higher-quality delivery. As a result, crop beds with ideal conditions and appropriate moisture can have a big influence on output. Traditional irrigation systems, such as stream flows from one end to the other, are usually used. As a result of this delivery, the moisture levels in the fields can alter. A designed watering system can help to enhance the management of the water system. This paper proposes a terrain-specific programmable water system that will save human work while simultaneously improving water efficiency and agricultural productivity. The setup is made up of an Arduino kit, a moisture sensor, and a Wi-Fi module. Data is acquired by connecting our experimental system to a cloud framework. After then, cloud services analyse the data and take the necessary actions.

7. **G. Sushanth and S. Sujatha, "IOT Based Smart Agriculture System", 2018.**

   Smart agriculture is a novel concept since IoT sensors can offer information about agricultural regions and then act on it based on user input. The purpose of this paper is to develop a smart agricultural system that utilises cutting-edge technologies such as Arduino, Internet of Things, and wireless sensor networks. Through automation, the research tries to take use of emerging technologies such as the Internet of Things (IoT) and smart agriculture. The capacity to monitor environmental factors is a critical component in increasing crop efficiency. The purpose of this paper is to develop a system that can monitor temperature, humidity, wetness, and even the movement of animals that might damage crops in agricultural areas using sensors, and then send an SMS notification as well as a notification on the app developed for the same to the farmer's smartphone via Wi-Fi/3G/4G if there is a discrepancy. The system uses a duplex communication link based on a cellular Internet interface, which allows data inspection and irrigation schedule to be changed using an android app. Because of its energy independence and inexpensive cost, the gadget has the potential to be useful in water-scarce, geographically isolated areas.