

# **MAHENDRA INSTITUTE OF TECHNOLOGY**

**Department of Computer Science and Engineering**

**IBM NALAIYATHIRAN**

## **Smart Farmer-IOT Enabled Smart Farming Application**

Team ID : PNT2022TMID39119  
Arivuchudar E (TL) - 422319106004  
Abinaya S (TM1) - 422319106001  
Banupriya M (TM2) - 422319106005  
Kowsalya R (TM3) - 422319106009  
Nivetha S (TM4) - 422319106010

### **ABSTRACT**

The growth of the global population coupled with a decline in natural resources, Farm land, and the increase in unpredictable environmental conditions leads to food security 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

### **INTRODUCTION**

In order to limit the wastage of natural resources like water, land, etc.. and achieve the preservation of natural resources and also reduce manpower and human energy wastage and initiate the process of automatic irrigation technique by the following ideology. Without reserved human interference in a the field we are automating the water irrigation system of the agricultural field using Arduino microcontroller and other necessary sensors by recording and monitoring the moisture level of the soil in the field by capturing the moisture level of the soil we can determine the necessity of the water level which is present in the soil for the plant which is planted while the moisture level is below bar we are supposed to automate the process of irrigation using the leading technology controller Arduino which can adopt to the climatic condition and working in a compact and efficient manner in all aspect like cost, compatibility to the environment. By doing this we create revolution in enabling smart farming using Internet of Things.

(Precision Farming)



## LITERATURESURVEY

The author one describes Farming is the backbone of the economy and it is the fundamental method for occupation. The large population of the world depends on farming for living day to day life. Around 70% of the Indian population depends on cultivation. Most of the cultivation cannot be productive only by physical activities so have to be handled by innovative technologies. Therefore, they use IoT innovation and SMS notification to address the critical part of farming. The past method of incorporating a keen water supply system with smart ideas. This undertaking is a follow up to a past method whose highlight features incorporates a keen water system with excellent control and insightful basic leadership in terms of exact continuous field information which regulates temperature, moisture and soil dampness of a particular crop. Controlling of every one of these activities will be monitored by PC with Internet and the tasks being performed by interfacing sensors and Arduino. With the observation results decisions are to be made.

The author two describes Internet of Things (IoT) technology has brought revolution to each and every field of the 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. Theme/objective of this report is to propose an IoT based Smart Farming System assisting farmers in getting Live Data(Temperature, Soil Moisture) for efficient environment monitoring which will enable them to increase their overall yield and quality of products. The IoT based Smart Farming System being proposed via this report is integrated with Arduino

Technology mixed with different Sensors and a Wi-fi module producing live data feed that can be obtained online from Things speak.com. The product being proposed is tested on Live Agriculture Fields giving high accuracy over 98% in data feeds.

The author three describes the increasing global population demands improved production to provide food in all sectors, especially in agriculture. Still, at certain periods, demand and supply will not match. Managing and sustaining capital and manpower is still a demanding challenge for improving agricultural production. Smart agriculture is a better option for growing food production, resource management, and labor. This research provides an overview of predictive analysis, Internet of Things (IoT) devices with cloud management and security units for multi-culture in the agriculture sector with considering farmer's prior experiences and also highlights the challenges and complications expected while integrating modern technology in the traditional farming practice experience. Based on the statistical and quantitative approaches gives better revolutionary changes in the current agriculture system. Besides, drone activation from IoT encounters crop status and stages, irrigation, plant leaves, diseases in the green field. The sensors that are activated for various purposes in IoT are discussed. Modern agriculture with state-of-the-art IoT devices and concepts is the main objective of this research. The systematic evaluation provides current and future trends in the agriculture sector.

The author four describes Today's different types of technologies, techniques and tools are used in the agriculture sector. To improve productivity, efficiency and reduce the time, cost and human intervention, there is a need for a new technology called the Internet of Things. To automate the agricultural activities like water management, soil monitoring, crop management, livestock monitoring etc , different types of sensor are used. Smart Green houses protect the plants from extreme weather. To control all these operations remote smart devices, computers connected with the internet, sensor, camera, micro-controller etc are used. Growth in the agriculture sector affects the economic condition of the country. This paper focuses on the Role of IoT in Agriculture that defines Smart Farming.

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