

# **Literature Survey**

## **Smart farm and monitoring system for measuring the Environment condition using wireless sensor network – IOT Technology in farming**

### **Authors :-**

- **Tharindu Madushan Bandara**
- **Wanninayaka Mudiyansele**
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### **Abstract :-**

Internet of things (IoT) gives a new proportion of smart farming and agriculture territory. Because with the development of the current world, the internet of things field has peaked with modern technology and modern techniques. In the modern world, IoT is used in every domain like smart city, smart university, smart car park system, etc. This paper is about the implementation of the smart farm. IoT concept helps in cost-efficient farming activities like crop and other resource management. With a wireless sensor network, it is easy to connect with every sensor node placed in the farming environment.

Also, with the wireless sensor network, it can connect with long-distance ranges. With the help of a sensor network, it can collect the data from the farming environment and analyze it according to the pre-defined values. The proposed system used IoT sensors to collect the data are soil moisture sensors, temperature sensors, water volume sensors, etc. According to the existing system analysis, the proposed solution contains a smart farm environment and a real-time monitoring system with the wireless sensor network for node connectivity. The proposed system provides a more reliable and flexible smart concept for the farmers, and it is a simple architecture that contains the IoT sensors that collect the data from the farm field and transfer those data through wireless sensor network to the central server and according to the input data, the primary server assigning the task to the particular devices.

## **Understanding IOT climate Data based Predictive Model for Outdoor Smart Farm**

### **Authors :-**

- **Juyoung Park**
- **Aekyung Moon**
- **Eunryung Lee**
- **Seunghan Kim**

## **Abstract :-**

Internet of Things (IoT) solutions adopted by various time-sensitive application domains consist of fine-grained sensors to predict actionable knowledge more accurately. This paper presents the concept of IoT climate and IoT climate-based predictive models for future farming. Firstly, we consider an online agricultural forecasting service based on IoT data collected from weather stations in real-time. To demonstrate the effectiveness of our proposed platform, we designed a frost forecasting service and pest forecasting services on the IoT climate data collected from weather stations. Our system notifies the possibilities of frost for farmers so that they can protect crops against frost damage. And it also sends several pest forecast messages to farmers using push services. The proposed model can effectively provide more precise agricultural forecasting services thus could potentially not only improve crop yield but also reduce unnecessary costs, such as the use of non-essential pesticides and fertilizers.

## **A Strategic Sensor Placement for a Smart Farm Water Sprinkler System: A Computational Model**

## **Authors :-**

- **Jinsuk Baek**
- **Munene W. Kanampiu**

## **Abstract :-**

Internet of Things (IoT) networking has attracted research with many emerging applications requiring remote control and automation. Effective deployment of IoT sensors is a major concern since it primarily determines the performance of the IoT network. Since multiple mobile sensors are generally involved, it is possible that the sensors are randomly distributed in a remote region at the initial phase then later relocated to some pre-computed optimal location with their full autonomy enabled. In this paper, we propose a computation for the optimal location of water sprinkler sensors of an IoT smart farm network in terms of the relative physical distance between them. The resulting sensors locations ensure minimal overlap coverage area and no uncovered area exists in the candidate farming region. With the proposed strategic deployment of smart water sprinklers sensors, farmers can be assured of the right water distribution for any given area of their farm.

## **Affordable Smart Farming Using IOT and Machine Learning**

## **Authors :-**

- **Reuben Varghese**
- **Smarita Sharma**

## **Abstract :-**

Each year many crops go waste due to a lack of optimal climatic conditions to support crop growth. Losses to the tune of over 11 billion dollars are reported each year in India alone. In this paper, we develop an affordable system which when deployed will give an insight into the real time condition of the crop. The system leverages Internet of Things(IoT) and Machine learning to produce an affordable smart farming module. This system uses state-of-the-art methods in order to improve the accuracy of the results and automate the monitoring of crops thereby requiring minimal human intervention. IoT is used to connect the ground module which includes the sensors to the cloud infrastructure. In the cloud, machine learning based real-time analytics is performed to predict the future condition of the crops based on its past data.