

LITERATURE REVIEW

[1] Jash Doshi, Tirthkumar Patel, Santosh kumar Bharti (2019) proposed a paper titled “Smart Farming using IoT, a solution for optimally monitoring farming conditions”. This method is to propose a technology which can generate a 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.

[2] Stephen C. Kerns, Joong-Lyul Lee (2017) proposed a paper titled “Automated Aeroponics System Using IoT for Smart Farming”. Aeroponics farming is an efficient and effective process for growing plants without using soil. The Aeroponics system uses IOT technologies. It is designed in three phases: mobile application, Service platform and IOT devices with sensors. Applying IOT technology to an Aeroponics system decreases the water wastage, increasing plant yield, minimizing rate of growth and reducing the workforce.

[3] M.W.P Maduranga, Ruwan Abeysekera(2020) proposed a paper titled “Machine Learning Applications In IOT Based Agriculture And Smart Farming”. This paper introduces Smart Farming using IOT technologies and Machine Learning. In an IoT solution, each sensor mote includes a microcontroller, multiple types of sensors (from simple temperature sensors to cameras), actuators, and wireless interfaces. These wireless interfaces could be WiFi, LoRaWAN, Zigbee etc. High-performance computing capability in ML opens up new opportunities for data-intensive science as the amount of data collected increases; ML algorithms could be applied to further enhance application intelligence and functionality.

[4] Manasa Sandeep, C. Nandini², Bindu L, Champa P, Deepika K H, Anushree N S (2018) proposed a paper titled “IoT based smart farming system”. In this paper, the sensor technology and wireless network in integration with IoT has been studied and reviewed based on the actual agricultural system. Here a distributed wireless network of sensors is used to collect the real time data of the various environmental parameters. The system involves image processing technique to identify the leaf diseases. The microcontroller handles this data. The wireless data transmission is carried out by Bluetooth module. An android application is designed to monitor the system.

[5] Vu Khanh Quy , Nguyen Van Hau , Dang Van Anh, Nguyen Minh Quy , Nguyen Tien Ban ,Stefania Lanza , Giovanni Randazzo and Anselme Muzirafuti(2022) proposed a paper titled “IoT-Enabled Smart Agriculture: Architecture, Applications, and Challenges”. This study presents a survey of IoT solutions and demonstrates how IoT can be integrated into the smart agriculture sector. 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 are used to achieve the objective.

[6] Nermeen Gamal Rezk¹ & Ezz El-Din Hemdan² & Abdel-Fattah Attia & Ayman El-Sayed² & Mohamed A. El-Rashidy(2021) proposed a paper titled “An efficient IoT based smart farming system using machine learning algorithms”. In this work, a method based on the blend of a wrapper feature selection approach, and PART classification technique is proposed for crop productivity and drought predicting. Five datasets are used for estimating the proposed method. The results indicated that the projected method is robust, accurate, and precise to classify and predict crop productivity and drought in comparison with the existing techniques. From the results, the proposed method proved to be most accurate in providing drought prediction as well as the productivity of crops like Bajra, Soybean, Jowar, and Sugarcane.

[7] Sehan Kim, Meonghun Lee, and Changsun Shin(2018) proposed a paper titled “IoT-Based Strawberry Disease Prediction System for Smart Farming”. In this paper, cloud-based technology capable of handling the collection, analysis, and prediction of agricultural environment information in one common platform was developed. This system registers, connects, and manages Internet of Things (IoT) devices and analyzes environmental and growth information. IoT-Hub network model supports efficient data transfer for each IoT device as well as communication for non-standard products, and exhibits high communication reliability even in poor communication environments.

[8] Nawandar, Neha Kailash Satpute, Vishal(2019) proposed a paper titled “IoT based intelligent irrigation support system for smart farming applications”. The system comprises of: sensing, data processing and actuator sections, with a network of ambient temperature and humidity at a height and, soil moisture sensor placed at the root zone of the subject. The sensor generated data is compressed and then sent to an FTP server for processing. Due to its good data handling, decision making capabilities for precise water usage, being portable and user-friendly, this system proves beneficial in home gardens, greenhouses.