LITERATURE SURVEY

**IOT BASED CROP PROTECTION SYSTEM FOR AGRICULTURE**

**TEAM MEMBERS**

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1. **Harika Pendyala , Ganesh Kumar Rodda , Anooja Mamidi, Madhavi Vangala4 Sathyam Bonala , Keerti Kumar Korlapati [1]** In every country agriculture is done from ages which are considered to be science and also art of cultivating plants. In day today life, technology is updating and it is also necessary to trend up agriculture too. IoT plays a key role in smart agriculture. Internets of Things (IoT) sensors are used to provide necessary information about agriculture fields. The main advantage of IoT is to monitor the agriculture by using the wireless sensor networks and collect the data from different sensors which are deployed at various no des and send by wireless protocol. By using IoT system the smart agriculture is powered by NodeMCU. It includes the humidity sensor, temperature sensor, moisture sensor and DC motor. This system starts to check the humidity and moisture level. The sensors are used to sense the level of water and if the level is below the range then the system automatically stars watering. According to the change in temperature level the sensor does its job. IoT also shows the information of humidity, moisture level by including date and time. The temperature level based on type of crops cultivated can also be adjusted.
2. **Soukaina Bouarourou , Abderrahim Zannou, Abdelhak Boulaalam, El Habib Nfaoui [2]** Integrating Internet of Things (IoT) techniques into different fields and processing data produced within it can effectively shape the future. In Precision Agriculture, the use of the IoT features helps to manage crops production by optimizing productivity and reducing environmental concerns based on prediction models. In this paper, an IoT-based agricultural monitoring system is proposed, which integrates principal component analysis (PCA) feature selection methods and neural network classification techniques for crop productivity prediction. Furthermore, the model system allowed a sensing network to collect data of some crops (Tomatoes, Potatoes, Etc.). The experimental results show that our proposed model system can make decisions more accurately.
3. **Pamidi Srinivasulu , M. Sarath Babu , R. Venkat , K. Rajesh [4]** In the present backdrop of agriculture scenario the fruits of farming are not being enjoyed by the producer due to various obstacles that come up in the process. Hence in order to get rid off these obstacles and to see that farming becomes smart and friendly, by using the technological advancements, the present work proposed has been prepared. The proposed work which makes use of various technologies like Big Data, Internet of Things (IoT), Cloud Computing, etc is going to be a big boon to the farmer who otherwise is made to undergo a tough time in view of lack of the technology that he/she should have been adapted by this time. The proposed one will provide a number of services to the farmers that include crop management, marketing, finance management, e-commerce, web services through cloud etc. which also will reduce the unemployment problem in the youth. It also makes agriculture not only a profession for living but also a profitable sector in the globe which further enhances the GDP.
4. **Dr.N.Suma, Sandra Rhea Samson, S.Saranya, G.Shanmugapriya, R.Subhashri** [4] 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.
5. **Akhilesh Kumar Singh , Kirti Verma , Manish Raj [5]** In Today's world Agriculture plays a very crucial part in any country. many countries depend upon it. because it is the source of a great economy and food. In India, a major part of the land is cultivated for agriculture. There are so many issues which come in front of farmers in agriculture like eating of crops by the animal, assumption of moisture of soil, surrounding temperature, etc. The problems which arise by physical and chemical causes can be improved through smart agriculture by modern technique So we use automation and IoT technologies. This research has smart ideas and developed techniques through them. an individual gets the report of temperature, humidity, moisture, the movement of animals, movable scarecrow which may destroy the crops in the agricultural field through sensors using NodeMcu and we get Notification of every incident on mobile. To Reduce cost we use the Blynk application we are easy to handle for monitoring every Incident-related smart agriculture
6. **Kazy Noor-e-Alam Siddiquee , Md. Shabiul Islam,Ninni Singh,Vinit Kumar Gunjan,Wong Hin Yong , Mohammad Nurul Huda and D.S. Bhupal Naik [6] S**ensor-based agriculture monitoring systems have limited outcomes on the detection or counting of vegetables from agriculture fields due to the utilization of either conventional color transformations or machine learning-based methods. To overcome these limitations, this research is aimed at proposing an IoT-based smart agriculture monitoring system with multiple algorithms such as detection, quantification, ripeness checking, and detection of infected vegetables. This paper presents smart agriculture monitoring systems for Internet of Things (IoT) applications. The CHT has been applied to detect and quantify vegetables from the agriculture field. Using color thresholding and color segmentation techniques, defected vegetables have also been detected. A machine learning method-convolutional neural network (CNN) has been used for the development and implementation of all algorithms. A comparison between traditional methods and CNN has been simulated in MATLAB to find out the optimal method for its implementation in this agricultural monitoring system. Compared to the traditional methods, the CNN is the optimal method in this research work which performed better over the previously developed algorithms with an accuracy of more than 90%. As an example (case study), a tomato field in Chittagong, Bangladesh, was chosen where a camera-mounted mobile robot captured images from the agriculture field for which the proposed IoT-based smart monitoring system was developed. This system will benefit farmers through the digitally monitored output at an agriculture field in Bangladesh as well as in Malaysia. Since this proposed smart IoT-based system is still driven by bulky, costly, and limited powered sensors, in a future work, for the required power of sensors, this research work is aimed at the design and development of an energy harvester (hybrid) (HEH) based on ultralow power electronics circuits to generate the required power of sensors. Implementation of multiple algorithms using CNN, circular Hough transformation (CHT), color thresholding, and color segmentation methods for the detection, quantification, ripeness checking, and detection of infected crops.

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