

LITERATURE REVIEW

- [1] N S Gogul Dev, K S Sreenesh, P K Binu (2019) have published a paper titled "IoT Based Automated Crop Protection System". Low productivity of crops is one of the main problems faced by the farmers in our country. This can be because of two main reasons. Crops are destroyed by wild animals and because of bad weather conditions. This paper provides a solution to the destruction of crops by animals. This system will provide a complete technical solution using the Internet of things (IoT) to the farmers to prevent their crops from being wild animals and provide information to the farmers to maximize their production. Animals are detected using PIR sensors and cameras and animals are identified using TensorFlow image processing Techniques. Raspberry PI is used as the processing unit of the system and sound buzzers are used to emit the ultrasound frequencies.
- [2] R Nageswara Rao, B Sridhar (2018) have proposed a paper titled "IoT based smart crop-field monitoring and automation irrigation system". Agriculture plays a vital role in the development of agricultural country like India. Issues concerning agriculture have been always hindering the development of the country. Hence the proposed method aims at making agriculture smart using automation and IoT technologies. A Raspberry Pi-based automatic irrigation IoT system is proposed for modernization and improves the productivity of the crop. The main aim of this work is to crop development at low quantity water consumption. In order to focus on water available to the plants at the required time, for that purpose, most farmers waste a lot of time in the fields. Efficient management of water should be developed and the system circuit complexity to be reduced. The proposed system is developed on the information sent from the sensors and estimates the quantity of water needed. Two sensors are used to get the data to the base station the humidity and the temperature of the soil, the humidity, the temperature, and the duration of sunshine per day. The proposed systems based on these values and calculate the water quantity for irrigation is required. The major advantage of the system is implementing Precision Agriculture (PA) with cloud computing, which will optimize the usage of water fertilizers while maximizing the yield of the crops and also will help in analyzing the weather conditions of the field.
- [3] S. Karthika, Kalyana Rangan V, Aditya K, Anand Anil Kumar, D. Selvakumar (2021) has presented a paper under the heading "IOT BASED CROP PROTECTION SYSTEM". The effect of insects on farmland has been very high in certain areas. The climatic changes even add to the woes of a farmer. The widespread adoption of chemical pesticides has resulted in unprecedented crop yields. The agriculture pest monitoring device is a moving bot or a line following bot which monitors the number of pests in farmland. The image that is captured using the camera module is processed using a convolution neural network involving processes like image acquisition, preprocessing, grayscale conversion blurring, max pooling, and using ReLU for faster training of the dataset. It calculates and sends the amount of pest present in a particular crop and suggests the amount of pesticide being sprayed.
- [4] Priyanka Deotale, Prasad Lokulwar (2021) have published a paper titled "Smart Crop Protection System from Wild Animals Using IoT". Crops in agricultural land are destroyed by domestic animals and wild animals, which is one of the reasons for low productivity. Farmers can't be there for the entire 24 hours so we have made use of IoT to control the animals destroying the field. Once the animal is detected the system will alarm and start lightning in the corner of the farm. It will not harm any animals and we can also protect the crops.

- [5] Shishir Bagal, Krunal Mahajan, Riya Parate, Ekta Zade, Shubham Khante(2021) have published a paper under the heading“Smart Crop Protection System Using IOT”.The Smart protection system defines this project to help farmers for the protection of a farms. We have designed this project for only security from animals but this project has the provision to secure from humans also. This can be achieved with the help of IoT device that we are discussing in this paper. The SCPS works on the battery so that this project can be easily portable. We are adding solar panels and converter modules which can help the battery to charge from solar energy. The IoT device is used to indicate to the farmer by a message when someone enters the farm and we have used an SD card module that helps to store a specified sound to scare the animals.
- [6] Damini Kalra,Praveen Kumar,K Singh,Apurva Soni(2020)have published a paper titled “Sensor based Crop Protection System with IOT monitored Automatic Irrigation”.Agriculture assumes a significant job for advancement in nourishment creation and crop protection in India. Here, agriculture relies upon disproportionate rain which thereby affects India's agriculture. There arises a need for effective irrigation for agricultural production. The control over how much water is to be supplied and when it is to be applied determines the uniformity which is key to maximizing the irrigation efforts. Proper irrigation management takes careful consideration and vigilant observations. It has many benefits. Keen water irrigation and protection system framework is in this way accepted to be a significant arrangement. The paper along these lines presents an effective water system framework that advances the accessible water in the water supply and in this manner gives an effective and powerful mechanism for irrigation purposes. The irrigation framework would automatically begin/stop water siphons, on the agricultural site depending upon the dampness content obtained by the moisture sensor as soon as it senses the level of water in the reservoir. The deliberate sensor estimates are sent to the Arduino Uno microcontroller for arranging the controlled calculation. The protection is done through voice detection and movement detection methods to enable high-frequency sound, hence protecting the crops from insects, pests, and small animals.
- [7] Ipseeta Nanda,Sahithi Chadalavada,Medepalli Swathi,Lizina Khatua(2021)have published a paper titled”Implementation of IIoT based smart crop protection and irrigation system”.A centralizing method in the area of IIoT contrived for understanding agriculture which preceded the arrangements of low-power devices. This paper yields a monitoring procedure for farm safety against animal attacks and climate change conditions. IIoT advances are frequently used in smart farming to emphasize the standard of agriculture. It contains types of sensors and controllers. On behalf of WSN, the ARM Cortex-A board which consumes 3W is the foremost essence of the procedure. Different sensors like DHT 11 Humidity & Temperature Sensor, PIR Sensor, LDR sensor, HC-SR04 Ultrasonic Sensor, and camera are mounted on the ARM Cortex-A board. The PIR goes high on noticing the movement within the scope, the camera starts to record, and the data will be reserved on-board and in the IoT cloud, instantaneously information will be generated automatically towards the recorded quantity using a SIM900A unit to notify about the interference with the information of the weather conditions obtained by DHT11. If a variance happens, the announcement of the threshold rate will be sent to the cell number or to the website. The result will be generated on a catalog of the mobile of the person to take the necessary action.

- [8] R.M.Joany,E.Logashanmugam,E.AnnaDevi,S.Yogalakshmi,L.Magthelin Therase, G.Jegan(2022) have published a paper titled “IoT based Crop Protection System during Rainy Season”. Water is progressively turning into the foremost limited resource required to satisfy the developing populace. It's important part in the life of human beings is emphasized in arid lands, wherever it is recognized by low annual downfall. Moreover the irregular temporal and spatial dissemination ensures dry and damp periods. This type of environmental circumstance impacts water expediency and crop yielding permanency. Thus, farming is challenging and this is credited to unsuccessful access to water. The chief and much-needed agricultural element in arid lands is the potency of agricultural water use. Beneath reduced and changing downfall circumstances, reasonable irrigation administration may be a great way to up water-use potency. Within the field of agriculture, IoT technology provides varied advantages to farms by addressing numerous problems faced by them. Such techniques facilitate boosting the standard, amount, and property of agricultural merchandise. Towards this objective, an associate degree IoT based mostly sensible irrigation system is projected, which calculates the exact water supply of the crop that aids in its life cycle and climate. When this calculated crop water demand is mistreated, there is a pump motor that operates instinctively each time the dampness of the soil goes low beyond the enduring welting purpose. The motor is closed down once the desired water is wired to resolute crops. This ensures an acceptable level of water is used for watering the crops which might aid in higher quality crop production. During this work, numerous parameters like wetness, wetness, and temperature area units are monitored endlessly for mistreatment acceptable sensors. The information non heritable by these sensors area unit collected mistreatment Arduino microcontroller. The pump motors and therefore the RF / GSM transceivers area unit operated mistreatment AT Mega controllers.