PLANT INFECTION DETECTION AND PREDICATION SUBMITTED

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Abstract - **Leaf infection is the invasion of leaf tissues by disease causing agents such as bacteria, virus, fungus etc leading to degradation of the leaf as well as plant. This can be characterized by spots on the leaves, dryness of leaves, color change in leaves and defoliation. The leaf infections may occur due to environmental condition changes such as huge rain fall, drastic changes in temperature or may be due to improper maintenance and some insects and pesticides Once the disease causing organisms such as bacteria, virus etc, entered into the leaf tissue, they starts multiplying and decreases the strength of th e leaf and degradation starts.**

Index Terms - Prediction, Detection, Infection, defoliation, degradation

I. INTRODUCTION

Detection of plant disease through some automatic technique is beneficial to farmer which is used for automatic detection and classification of plant leaf diseases. Control measures can be a waste of time and money and can lead to further plant losses. It includes detection of diseased leaf to measure the affected area by disease, to determine the affected area and provide the proper solution. India holds 12th position in global agriculture GDP ranking and accounts 7.68% of global agricultural output having the largest area under the cultivation. In spite of agriculture being only the source of livelihood for the large fraction of Indian population, the technological advancement in this fields are not much to bridge the gap between agriculture and technology. Our system work is an initiative towards developing a low cost, reliable, accurate solution for detecting the plant health. Where nutrients play the key role. Therefore analysing nutrients deficiencies in plants have become an important task for healthy growth plant. The production of crops is associate with many factors, for example, climate change, plant diseases, and insect pests. According to recent researches, about half of the crop yield in the world is lost to pest infestations and crop diseases .

Crop pests cause significant damage to crops and mainly affect the productivity of crop yield, whether in developing or developed countries. Hence, it is of great significance to identify insects in the crops at an early stage and select optimal treatments, which is an important prerequisite for reducing. The associate editor coordinating the review of this manuscript and approving it for publication was Chang-Hwan Son . crop loss and pesticide use. There are too many types of insects and the number of individuals which belongs to the same species is enormous. However, traditional pest identification of insects is typically time-consuming and inefficient. Therefore, in order to improve the efficiency of agricultural production, a new effective recognition method should be proposed. Nowadays, with the development of deep learning, many researchers apply this technology into different fields and many excellent approaches have been proposed. Because of the successful applications of deep learning in diverse areas, it also has been used in agriculture.

II. LITERATURE SURVEY

1. **Paper Name: Mixed infection of plant viruses: diagnostics, interactions and impact on host**

Several approaches like cocktail ELISA, multiplex PCR for known viruses and next-generation sequencing for both known and unknown viruses have been developed for detection of mixed infection of viruses. During mixed infection, several kinds of interaction commonly referred to as synergistic or antagonistic interactions are going on between and among the viruses, which aggravate the disease with more severe symptoms than with single infections. Here, we review the mixed infection of viruses, methods of detection, factors infuencing, interactions and impact on plant during mixed infection.

2. Paper Name: Plant Disease Detection And Its Solution Using Image Classification

This paper is used to explore the leaf disease prediction at an untimely action. We propose an enhanced k-mean clustering algorithm to predict the infected area of the leaves.

3. Paper Name: Plant Disease Identification using Image Processing

This application help the farmer to identify the various disease and take cure of plant from various diseases. Indian economy is highly depend upon the agriculture. So it is important to introduce new technologies in the horticulture field

4. Paper Name: A review on the main challenges in automatic plant disease identification based on visible range images

This paper provides an analysis of each one of those challenges, emphasizing both the problems that they may cause and how they may have potentially affected the techniques proposed in the past. Some possible solutions capable of overcoming at least some of those challenges are proposed.

III. PROPOSED SYSTEM

First user register and login system.User upload plant image to server.Our training module process image and give the output to user. We also provide infection predication result base on weather condition. We will provide infection solution to user.
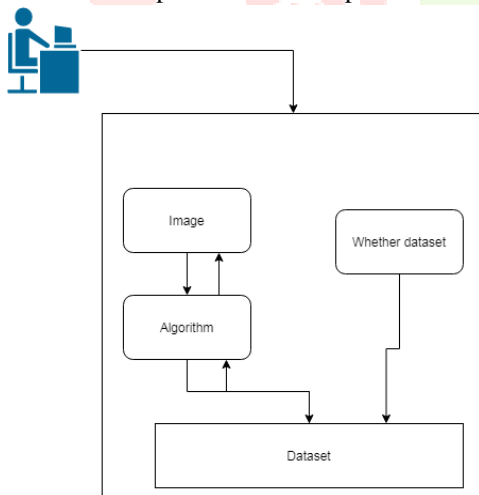

Fig.1.Proposed system

IV. ALGORITHM

We used the algorithms that is

1)   SVM(Support vector machine)Algorithm
2)   CNN(Convolutional neural networks)Algorithm

1) We are using Support Vector Machine (SVM) in our project to detect predator. It is a supervised machine learning model that divides dataset into different classes on hyperplane which is used to find maximum margin. We'll feed labeled data to train our model, in prediction phase labeled data will get matched with new data with the help of the SVM algorithm in order to give desired output.

2)Following are the basic steps for CNN Algorithm

Step 1: Convolution Operation. ...
    Step 1(b): ReLU Layer. ...
Step 2: Pooling. ...
Step 3: Flattening. ...
Step 4: Full Connection. ...

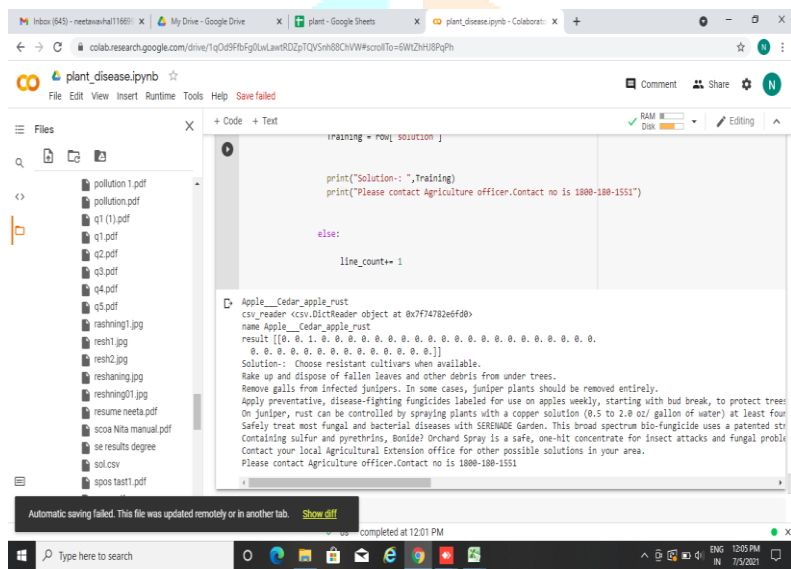In this module we used these two main algorithms.
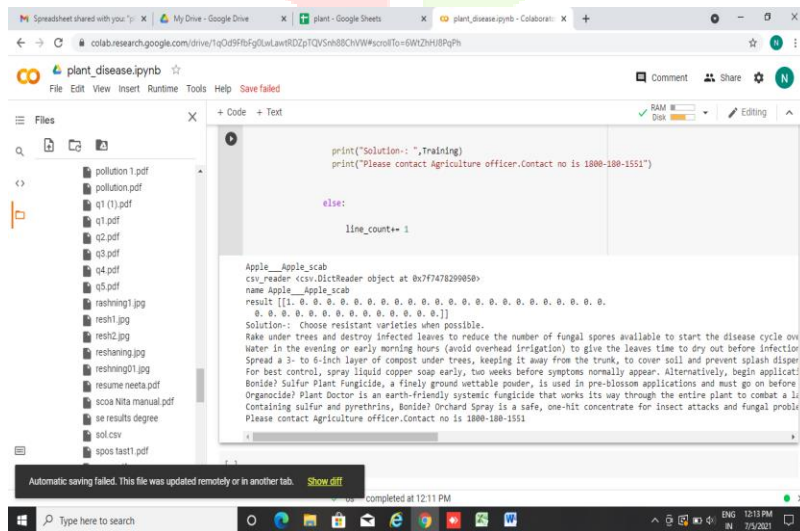
V.RESULT

Fig.2. screenshot of result

Fig.11.2 screenshot of result

CONCLUSION

Entire project is about Farming and its techniques. This project will reduce the farmer suicides and help them with the cost and save money from any more destroyed crops.

Agricultural department wants to automate the detecting the yield crops from eligibility process (real time).To automate this process by show the prediction result in web application or desktop application.To optimize the work to implement in Artificial Intelligence environment.

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