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Support Vector Machine Based Classification of Leaf Diseases

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Abstract: India is a agriculture land which has got vast expansion of its roots which belong to the surface area expansion which makes country a productive channel in it is values and culture essence practically cover all major expansions . This land belongs to the agro - farming techniques which are more organized and later displacement of the techniques which bind up the metereology of the roots which grow with the advanced atmosphere making country a [productive channel .

Leaf diseases which make microorganisms leaf blots visible to naked eyes which makes up the detection of diseases appear in the section of the disease which makes up the visibility of the diseases such as rot, blight , foliar . So, the image processing techniques can be used in agricultural sector. The research work presents a support vector machine classifier algorithm by using MATLAB R2017a for the classification of leaf diseases such as Foliar , Blight leaf spot, Bacterial Blight and so on. In this section we are discussing about MATLAB and combination of machine learning which defines the disease detection using Support Vector Machine , K- means Clustering, gray level clustering random forest and logistic regression

Keywords: leaf diseases; median filter; k-means clustering; gray level co-occurrence matrix; support vector machine

INTRODUCTION

Most of the diseases symptoms are found in leaves, stem and fruit. The image processing can be used in the leaf diseases detection and classification system. The common diseases of leaf are Bacterial Blight, Anthracnose, Alternaria Alternata, and so on. Such diseases are commonly found on mango, rice, watermelon, and others leaf The leaf disease which prepares up the making of leaf diseases which binds up the process of agriculture detection through various models Foliar , Cirtus fruits small reddish brown circular spots appear on the leaves.

1. Anthracnose: Appears as small regular or irregular dull violet or black leaf spots with yellowish halos. Leaves turn yellow and fall out.
2. Bacterial Blight: Appearance of one to several small water soaked, dark colored irregular spots on leaf
3. Foliar Disease - Apple fruit an edible fruit makes up the seeds swollen and tender , This disease is commonly known as in for the dark spots visible on leaf .

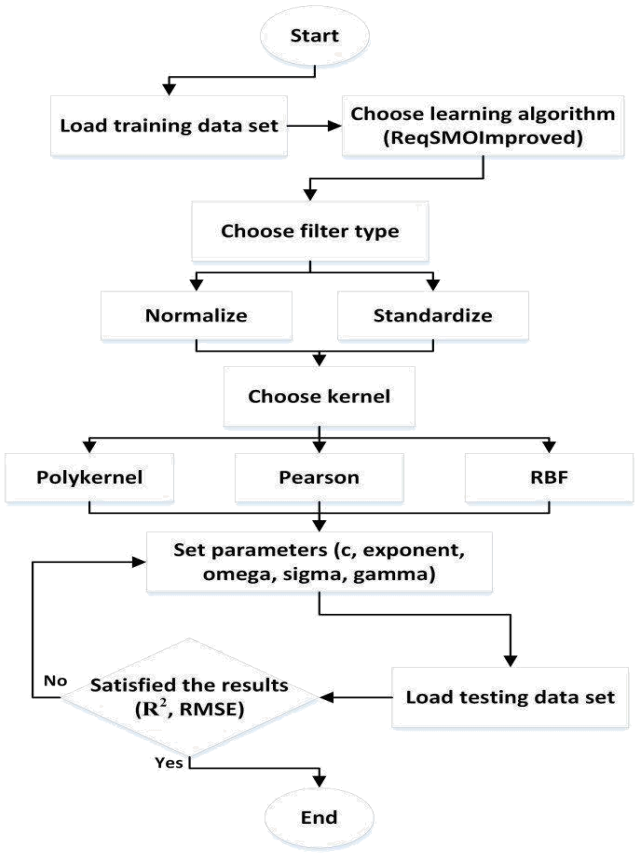
2. 3.LITERATURE REVIEW

The leaf detection based upon the analysis of the leaf detection using support vector machine, visual analysis , digital image processing and the disease studied for in guidance to improve the nature of the healthy and unhealthy leaf . The leaf detection used various paradigms which makes up the leaf disease detection via K-means clustering , random forest , logistic regression . Logistic regression studies about the nature of leaf detection which makes up the color of leaf specifically stating the parameters of the nature which comes with the detection of the nature which covers up with the binding opf the foliar disease expressed in paper .

The nature of the leaf disease detection which comes up with the viral nature or atmosphere which makes up the new advent of technologies like Logistic regression , K- means clustering , support vector machine , Gray - Level ,K- means clustering , Concurrence matrix . Digital image processing .

3. METHODOLOGY

The methodology of the research work can be divided into four stages such as image preprocessing, image segmentation, feature extraction, and disease detection and classification. Block diagram of the system is shown in Figure 1 [4].

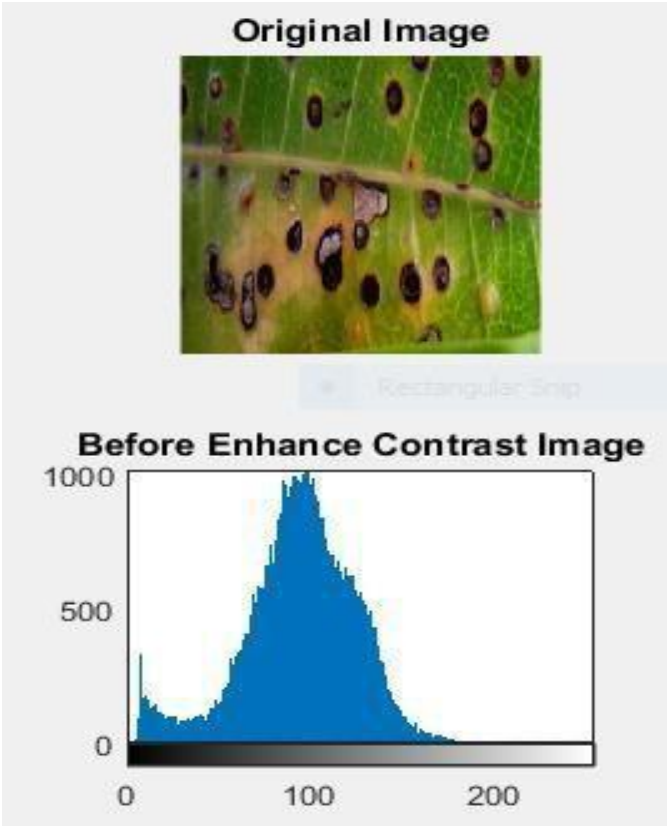


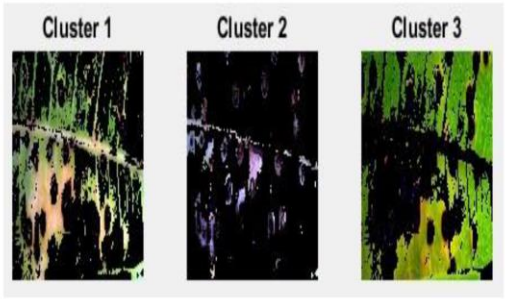
3.1 Logistic Regression

Machine Learning aims at providing he performance, experience and tasks .It Is being explicitly being programmed .Machine learning aims at providing the nature of expressing the performance , experience and tasks . Basically we are discussing upon the nature of the disease which is laid upon the articles of the mentioned foliar disease in the discussion of the paper

Logistic regression is basically a binary classification, which aims at the the study of the diseases which are clearly visible with the naked eyes. This classification study aims the providing the nature of the detection which imparts the color being independently visible to our eyes

Table 1. Some Colors and Three HIS Intensity Value





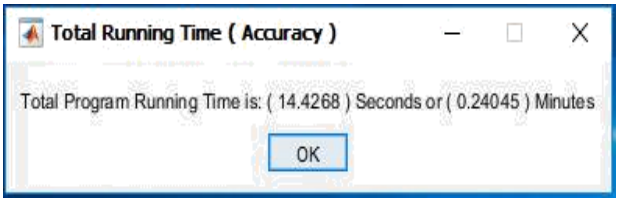


Table 2. The percentage values of accuracy of each disease

Sr. No	Disease Type	Percentage of Accuracy
1.	Alternaria Alternata	80.6452 %
2.	Anthracnose	82.2581 %
3.	Bacterial Blight	80.6452 %
4.	Cercosporal Leaf Spot	82.2581 %
5.	Healthy Leaf	83.8710 %

4. CONCLUSION

Fom the conclusion we derive that the natureof leafdisease is .93333% accuracy derived .This results aims at providing the nature of the disease which derives the foliar and other diseases .

5. ACKNOWLEDGEMENTS

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