PRIOR KNOWLEDGE

Date	19 october 2022
Team ID	PNT2022TMID43230
Project Name	Fertilizers Recommendation System For Disease Prediction
Maximum Marks	

Detection and recognition of plant diseases at their earliest.Plant pathologists can analyze digital images using digital image processing to diagnose plant diseases.Application of computer vision and images processing strategies assists farmers in all agriculture regions.Generally,plant diseases are caused by the abnormal physiological functionalities of plants.Therefore,the characteristic symptoms are generated based on the differentiation between expected physiological functionalities and abnormal physiological functionalities of the plants.Mainly,plant leaf diseases are caused by pathogens positioned on the plant's stems.Different methods in image processing predict these different symptoms and diseases of leaves.These Different methods include different fundamental processes like segmentation, feature extraction and classification and so on.Mainly, the prediction and diagnosis of leaf diseases depand on segmentation,such as segmenting the healthly tissues from diseased tissues of leaves.

1.Image Classification

The proposed image classification techique is divided into the following steps

2.Image acquisition

The purpose of image proprocessing is improving image statistics so that undesired distortions are suppressed and image capabilities which are probably revelent for similar processing are emphasized.The preprocessing

receives an image as input and generates an output image as a grayscale,an invert and a smoothed one.

3.Segmentation

Implements Guided active contour method. Unconstrained active contours applied to the difficult natural images. Dealing with unsatisfying contours, which would try and make their way through every possible grab cut in the border of the leaf. The proposed solution is used the polygonal model obtained after the first step not only as an initial leaf contour but also as a shape prior that will guide its evolution towards the real leaf boundary.

4.Disease Prediction

Leaves are affected by bacteria, fungi,virus and other insects. Suppose vector machine(SVM) algorithm classifies the leaf imageas normal or affected. Vectors are constructed based on leaf feautures such as color, shape. Then hyperplaneconstructed with conditions to categorize the preprocessed leaves and also implement multiclass classifier, to predict diseases in leaf image with improved accuracy.

5.Fertilizer Recommendation

Recommended the fertilizer for affected leaves based on severity level. Fertilizers may be organic or inorganic. Admin can store the fertilizers based on disease categorization with severity levels. The measurements of fertilizers suggested based on disease severity.