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Novel Herbal Treatment for Natural Disease using Mobile Application Development

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***Abstract:** This is fully automatic methodology for the popularity of healthful plants victimisation pc vision and machine learning techniques has been bestowed. Leaves from twenty four totally different healthful plant species were collected and photographed employing a good phone during a laboratory setting. An oversized variety of options were extracted from every leaf like its length, width, perimeter, and area, variety of vertices, colour, perimeter and space of hull. many derived options were then computed from these attributes. the simplest results were obtained from a SVM classifier employing a 10 -fold cross- validation technique. With Associate in nursing accuracy of 90.1%, SVM classifier performed higher than alternative machine learning approaches like the k-nearest neighbour, Naïve mathematician, KNN and neural networks.*

***Keywords:** Datasets, pre-processing, segmentation, feature Extraction, image enhancement, SVM classifier*

I. INTRODUCTION

There are many varieties of medicinal plants available in India. Many are left unknown which made them to become extinct. Homeopathy treatment has emerged much better than Allopathy for the past few years. So for the purpose of making people know about herbal treatment we have found an mobile application that suggests you which medicinal plant will cure your disease.

In this application you can provide your symptoms as input, the automated system will suggest appropriate medicinal plant which can cure your disease, the output also adds-on by suggesting the region where the medicinal plants is present. Once you reach the region, you can search that medicinal plant.

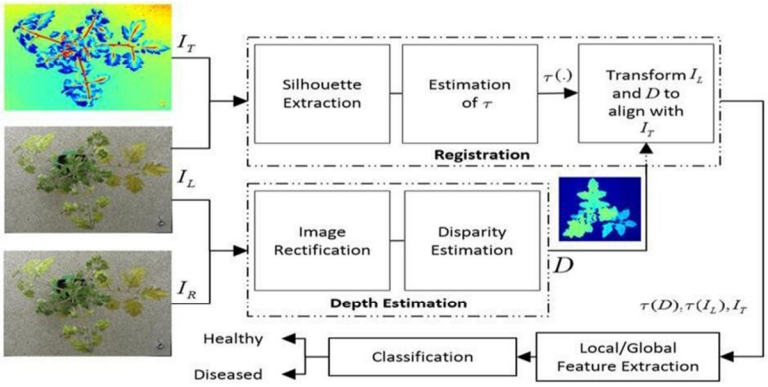
Once you reached the location, using your smart phone you can take the photograph of the medicinal plants which you got as a suggestion, in the backend some steps including leaf classification, pre-processing, image enhancements, feature extractions will take place. And finally, you can find the leaf which you have suggested for by our automated system. We have trained our system with a datasetthat contain 24 types of medicinal plants in a basis of 10 different patterns for each plant to improve accuracy.

Also, our application will tell the maximum amount to be consumed, but all these results depends on the data (symptoms) which you fed as input. Thus this application helps in providing a natural treatment to cure your disease. You can also add medicinal plants which are to be found in future.

II. PROPOSED SYSTEM

The proposed system was tested on a dataset of 55 medicinal plants and a very high accuracy of 98.3% was obtained with a support vector machines (SVM) classifier. The size of each image was 256*256 pixels. Proposed an approach based on fractal dimension features based on leaf shape and vein patterns for the recognition and classification plant leaves. Using a scanning method dimension approach to generate a texture signature for a leaf and the description of the particular leaf

III. ARCHITECTURE DIAGRA



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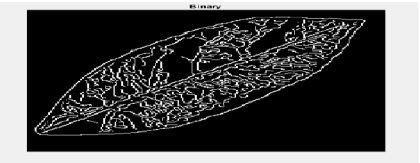
A. Automatic Pre-Processing Steps

One disadvantage of taking pictures utilizing a camera, rather than utilizing a scanner, is the nearness of shadows on the picture. On the off chance that the shadow isn't expelled, this will influence all estimation. In this manner, to evacuate the shadow, the picture should initially be changed over to the HSV arrangement and after that split into its diverse shading channels. Just the second channel (immersion) is kept. This has the impact of expelling the shadow from the picture. To diminish commotion in the picture, a middle haze channel with a window size of 25 is connected to the subsequent image.The following stage is to play out a thresholding task which will change over the picture into a parallel picture with just two qualities: highly contrasting pixels. This is accomplished utilizing the Otsu thresholding strategy. An opening task is then performed on the pictures. This is a disintegration activity pursued by a widening. Disintegration has the impact of lessening the measure of frontal area (white) pixels while widening extends them. This activity is vital so as to clear the picture from numerous little boisterous pixels, which are the ancient rarities of the thresholding task

B. Feature Extraction

Various base highlights were extricated from the pictures in Figures 1 and 2. These are: length, width, territory of the bouncing box, region of leaf, border of leaf, structure region, body edge, number of vertices, flat and vertical The primary module is of taking pictures utilizing a camera, rather than utilizing a scanner, is the nearness of shadows on the picture. On the off chance that the shadow isn't expelled, this will influence all remove maps, 45 outspread guide and the first RGB values estimation. Therefore, to expel the shadow, the picture must of every pixel demonstrates the bouncing box (in red) and the shape line (in green) around a monster thistle leaf. Utilizing the bouncing box, the length and the width of the leaf can undoubtedly becomputed. The edge of the leaf is acquired from the form line. The region of the leaf compares to the void area inside the green form line. Figure 4 demonstrates the curved structure which can be utilized to register the frame edge and the body territory. The structure is the littlest polygon that can contain the leaf. The curved body is additionally used to figure the quantity of vertices in the leaf. Despite the fact that the calculation which is utilized to compute the quantity of vertices isn't exact, it was as yet a decent differentiator. This is chiefly on the grounds that it is a crude quality which is free of the measure of the leaf.



The first module is of taking pictures using a camera, instead of using a scanner, is the presence of shadows on the image. If the shadow is not removed, this will affect all first be converted to the HSV format and then split into its
different colour channels. Only the second channel (saturation) is kept. This has the effect of removing the shadow from the image. To reduce noise in the image, a median blur filter with a window size of 25 is applied to the
resulting image. The next step is to perform a thresholding operation which will convert the image into a binary image with only two values: black and white pixels. This is achieved using the Otsu thresholding method. An opening operation is then performed on the images. This is an erosion operation followed by a dilation. Erosion has the effect of reducing the size of foreground (white) pixels while dilation enlarges them. This operation is important in order to clear the image from many small noisy pixels, which are the artefacts of the thresholding operation

C. Derived Features

Using the base features which are extracted directly from the image, a number of derived features are calculated [3]. Ratios are more suitable for comparison as they are independent of the actual size of the image in pixels.

IV. MODULES

V. CONCLUSION

Thus by using this application user can able to treat themselves using the medicinal plants which is suggested. Hence they don't need to visit the health care and wait in a queue to get treated. The future enhancements may be done as, if the symptoms doesn't cure for duration which is already provided, a high dosage plant can be suggested as per requirement.

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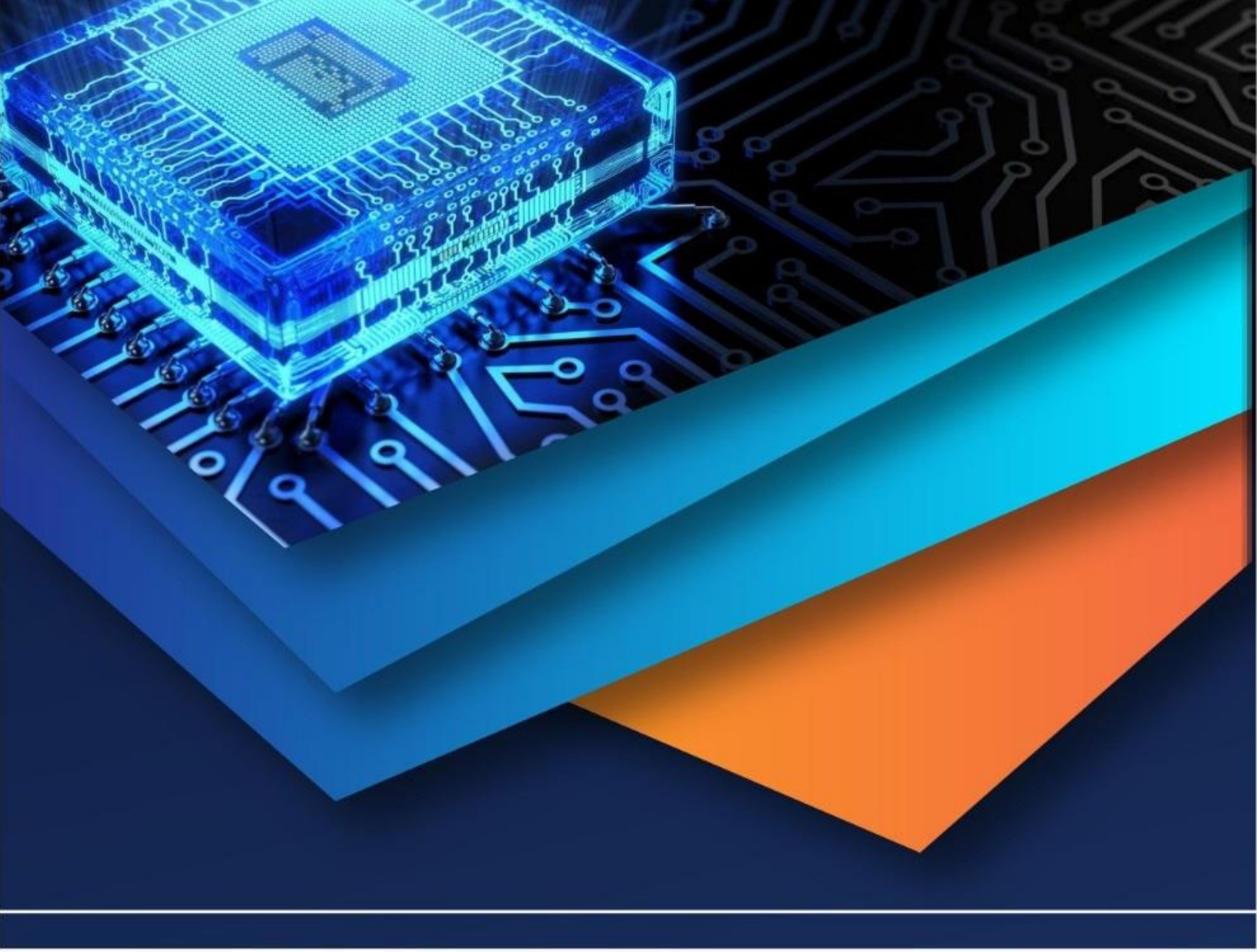

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