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Epidermis Infection Detection Using Machine Learning

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Abstract: *The epidermis infection is most dangerous and effectively spreading disease. The disease like melanoma, eczema and impetigo. Can be cured if we detect it earlier. The major problem with it is, patient needs dermatologist to know the kind of infection and get rid of it. But we can't declare the 100% accurate medication by the doctor. The proposed paper uses many methods of image processing and deep learning. It supports web based and android based devices so that patient can instantly and periodically check the epidermis by uploading the infected area. This provides the accurate results with respect to input. Infected area 7 can be classified using the methods like image processing it has many dimension of image editing like the image resizing, color contrasting and image processing. At the end of the editing we compare the image of infected area with the dataset. Here dataset is nothing but the pre-collection of the samples of all kind of infections. When the features of the uploaded image are matched with the features of infection images which are already in the dataset will produce the result. The deep learning techniques process it and produce the accurate result. In the end of the testing it gives the basic medication suggestions too. Patient can get the best treatment for their infected epidermis.*

Key Word: *Images processing, epidermis infection, deep learning techniques.*

I. INTRODUCTION

The epidermis is the outer most layer or organ of the living organisms. It is like protector of inner body from the environment where air, dust, heat, sun light rays, other chemicals etc. when it comes to biological study, it protects inner body from fungal infection, gems, allergy causing things, infection spreading viruses etc. studying about skin infections where epidermis infection is not a simple disease to understand. It leads Not only disease it can leads to death too. infections like, genetic structure, irritation, allergies, red-ness, swelling and burnings are very serious matters to be considered.The infection considered to process and detect the disease associated with it. The patient may get deep depression, and he or she may feel low confidence. Treating the infection using deep learning and using different methods like SVM and HOG provides the medication suggestions and provides the information like in which stage the infection is present.

II.PROJECT PURPOSE AND SCOPE

Sometime features may minor to notice by doctors and doctors need some other evidence source to validate their assumption. The main confusion of many patients is, at very initial stage patents can't offer the hospitality to their infection and medication even patient himself can't take decision himself to recognize and classify the infection so this application can give classified infection details and basic medication suggestions. So I referred many of the papers to decide the accuracy of my assumption. Papers like, "disease detection model for human" for technical knowledge "automatic classification of clinical skin with additional high-level position information.", for classification "skin disease detection based on different segmentation", etc.

Proposed system has simplest way to implement and use the application. And needs less time to deal with the infection detection. Less man power and less man interaction. Security of data is main centered system. Results the ensure accuracy. It provides 24/7 medication suggestions for infected people. Also detects multiple disease and compares multiple disease with single infected area. Image resizing, Histogram equalization and Color transformation like, RGB to Grey are the techniques involved in the methods. Support Vector Regression is the method to extract the feature of the infected area. Naïve baye's is the another method which is used to classify the infections of epidermis based on attribute values.
X (A) is the evidence probability, which is normalized result.

Independently treating the complicated structure of infection
X (H| Multiple Evidences) = X (A1| A)*X (A2|H)…..*X (An|H)*X (H) / X (Multiple Evidences)

Flow of Naive Bayes

Here it takes T as the trained dataset as input.
V (v1, v2, v3…., In) predictor dataset variables.

1. Reading the dataset T,
2. Find the mean and deviation for predictor variables.

3. Repeat Calculation until all the variables get solved.
4. Compare and see which one is most likely to the dataset.
5. Consider more feature matched infection name as the result.

III. ARCHITECTURE AND TECHNOLOGY

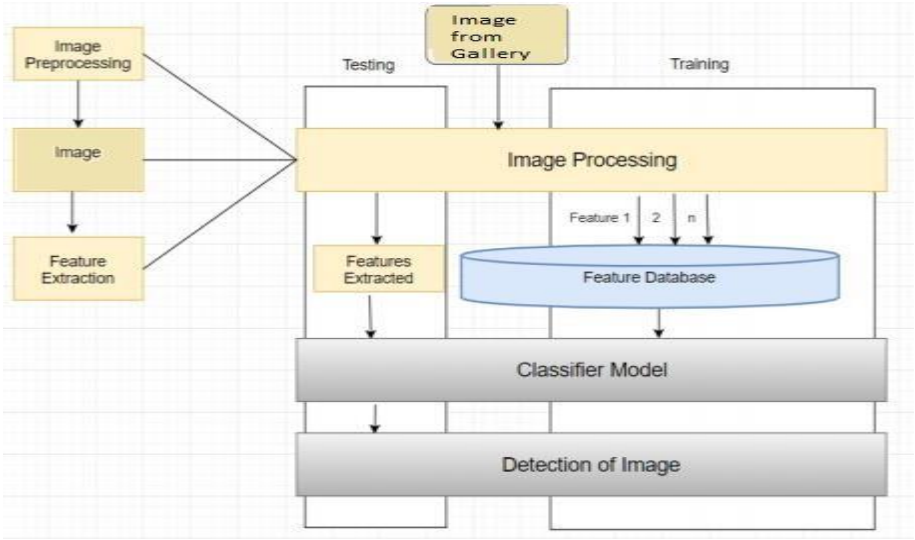

Fig1: Architecture of proposed system

Diagram of the Sequence

A Sequence graph is to show how the simple image can be processed and extract the features of infection. And how trained data can be compared and gives the accurate output.

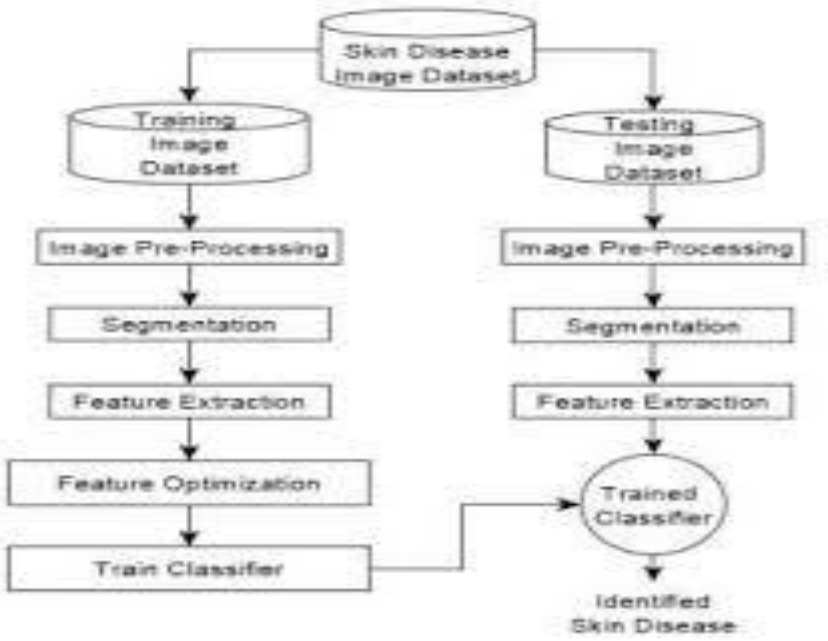

Fig2 Sequence diagram of disease detection

IV.CONCLUSION

Detection of infection disease is very important from this detection we can decrease the death rates, development of the infected skin and disease transition. When it is manual interaction between doctors and patient that will be consume more time and very expensive. It gives basic assumption and idea of infection to the doctors. It automatically shares the images of patient to the system for seeking the result. This system uses algorithms like SVM and naïve bays.

Future scope:

Proposed system has some future scopes like, there can be only one common model to deal with all kind of infections. So that user can feel less interactive complexity. And this model can be of multilingualism to improve the user friendliness. We can see verity of users on technical bases. So introducing the system to IOS user is also a considerable section

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