MINeD HACKATHON

SKIN DISEASE DETECTION THROUGH IMAGE PROCESSING

By Team NULL

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Skin Disease Detection through Image Processing

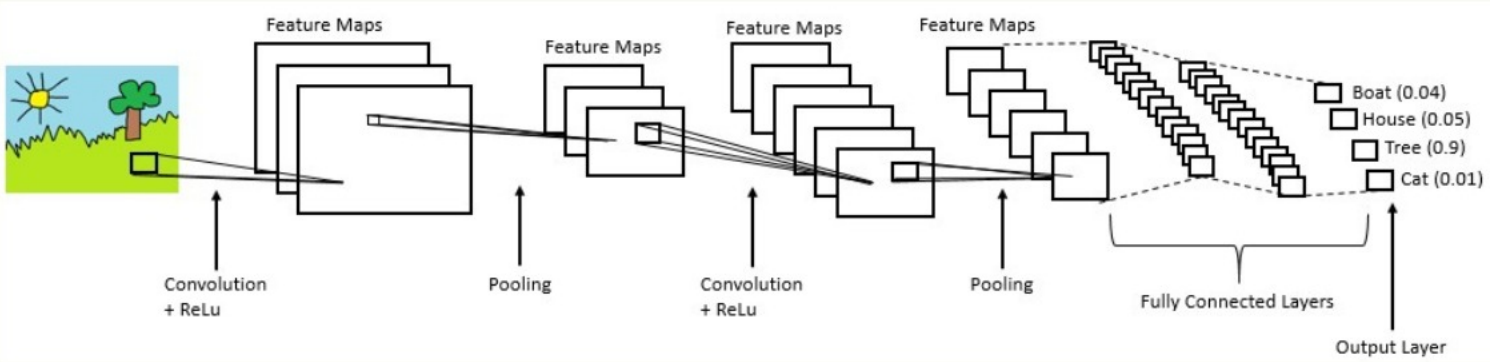
•**Abstract :** Dermatological Issues/disorders are most commonly spread worldwide. This can be caused by various fungal, bacterial, or skin allergies. Effective use of Emerging technologies like AI/ML can recognize such diseases. Computer Vision is one such platform that made the possibility of detecting the cause accurately through Images. Here We approach the interaction of Skin Images with the Computer. This method will take digital colored skin images as input, analyze them with the help of an algorithm and yield a specific disease as an output.

•**Problem Definition :** To develop a solution, the first step is to understand the problem. The problem here is to develop an Application Programming Interface which can be easily integrated with Android and IOS to detect the skin disease without any physical interaction with a Dermatologist. The detected skin disease should be sent through whatsapp to a particular patient and doctor.

Used ML libraries:

NUMPY : To convert image into matrics

Keras : To create neural network



Lifecycle of an image to find skin disease:

1. Reduce matrics of image by convolution using 32 channel
2. Image pooling by 2x2 pooling size
3. Again reduce matrics by convolution using 64 channel
4. Again pooling by 2x2 pooling size
5. Convert 2d array of image to 1d by flattern and add 128 units in 1st hidden layer and add 7 units in last layer

{
Akiec,BCC,Bkl,Df,Mel,Nv,Vasc
}

Possible Future Expansion

Currently we have used almost 4000 image to train model, Accuracy of the model is almost 80%.Which can be improved by using whole data set.

We can also use GPS API to locate nearby skin specialist to share data directly or show location of clinic.

More features can be added to front-end.

Live Scanning through camera to predict disease is also a good idea to implement for mobile devices.

GitHub Link:

https://github.com/dhanu0510/-NULL--Skin-Disease-Detection-through-Image-Processing

Our Prototype Video

https://youtu.be/6tTY5oL5Hpg

Dataset Used by us.

https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/DBW86T