Skin Disease Classification

Project By

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**Literature Survey**

Skin diseases are one of the most common types of health illnesses faced by the people for ages. The identification of skin disease mostly relies on the expertise of the doctors and skin biopsy results, which is a time-consuming process. An automated computer-based system for skin disease identification and classification through images is needed to improve the diagnostic accuracy as well as to handle the scarcity of human experts.

The current system is mobile based and hence very accessible even in remote areas and it is completely noninvasive to the patient's skin. The patient provides an image of the infected area of the skin as an input to the prototype. Image processing techniques are performed on this image and the detected disease is displayed at the output. The proposed system is highly beneficial in rural areas where access to dermatologists is limited.

The main objective of this project is to bring in the state of art technique, namely Convolution Neural Networks (CNN) for the purpose of the precise classification of skin disease from the image that is captured from the mobile device. The practical implication of the model is to design the app through which the image of the affected region of the skin is captured to determine the class of the skin disease.

| Sr.No. | Name  of  Research paper | Author Name | Technology used | Observation |
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| 1 | A Smartphone-Based Skin Disease Classification Using MobileNet CNN  ( October 2019) | Jessica Velasco, Cherry Pascion, Jean Wilmar Alberio, Jonathan Apuang, John Stephen Cruz, Mark Angelo Gomez, Benjamin Jr. Molina, Lyndon Tuala, August Thio-ac, Romeo Jr. Jorda | CNN MobileNet model, App Development | Oversampling and data augmentation generate the most  accurate result. |
| 2 | Potato Plant’s Disease Classification using  CNN and Transfer Learning  (July 2022) | Amit R.S, Sheetal Mittal, Heena Kouser, Akshitha Katkeri | CNN and Transfer Learning | Transfer Learning models are simple to use and have a high  degree of accuracy. |
| 3 | Skin Disease Detection using Machine Learning | Kritika Sujay Rao,  Pooja Suresh Yelkar, Omkar Narayan Pise, Dr. Swapna Borde | Convolutional Neural Network | Validation Data makes the system more accurate |
| 4 | Detection and classification of skin diseases  with ensembles of deep learning networks in  medical imaging | A. Kalaivani,  Dr. S. Karpagavalli |  | A multi-model ensemble approach to combine these two data mining techniques to  get the greatest accuracy of 96.1 percent. |
| 5 | Classification of Apple Tree Leaves Diseases using  Deep Learning Methods | Ashwaq Alsayed, Amani Alsabei, Muhammad Arif | ResNet-V2  (convolutional neural network) | The Adam optimizer is effective in the transfer learning of the ResNetV2 model. Increasing the number of instances may further improve  classification accuracy. |