

MELANOMA SKIN CANCER DETECTION USING IMAGE PROCESSING AND MACHINE LEARNING

TEAM

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1 .SYNOPSIS

Dermatological issues are considered as one of the biggest medical issues in the 21 st century. The Treatment methods are highly complex & the expenses are really high due to this.

Some diseases are really difficult to identify with naked eye and cure. This Complexity led to automated Identification of the diseases and symptoms and which provides upto 85% of accurate results.

Among all the types of skin diseases skin cancer is found to be the deadliest kind of disease found in humans. This is most commonly found in fair skin. The Malignant melanoma & Non-Melanoma are the 2 types of skin cancer. Only 4% of population are affected by the malignant melanoma cancer. But it's Highly dangerous and deadly disease. It holds for the 75% of the death caused due to skin cancer. Melanoma can be cured and gets better treatment options if it's identified or diagnosed in the early otherwise it is possible that melanoma can spread across the deeper skin cells and affect other body parts badly, then it becomes very difficult to cure. Melanoma is caused due to melanocytes which are present with in the skin. The exposure of the skin due to UV radiation also one of the major reason for melanoma. The ignorance and trying home remedies without knowing the seriousness of the

disease which leads to another kind of skin rashes or even increasing the severity of the problem.

System provides accurate prediction Of skin cancer & Classify this into malignant melanoma and Non-malignant melanoma. Based on Image processing & Machine learning mechanisms to Identify and classify the results by comparing with the Given datasets. Which uses some pre-processing steps followed by Hair removal, shadow removal, glare removal and also Segmentation. Support vector machine & Deep neural networks will be used in this classification process. The datasets are used from ISIC(International Skin Image Collaboration) dataset, Hence any dataset can be used for efficiency of prediction.

2. MODULE DESCRIPTION

1. **Admin :** Co-ordinating other modules
2. **Authentication:** The users have to register to the website by providing personal details including mobile number and email. It is through this registered mobile number that the results would be notified to the specific users.
3. **Image Clustering:** The data sets are collected from ISIC(International Skin Image Collaboration) which provides the images for checking accuracy. The datasets contain approximately 23000 images of which we have collected 1000-1500 image and trained and tested over the images.
4. **Image processing :** This module involves the preprocessing of the images where hair removal, glare removal and shading removal are done. Removal of these parameters helps us to identify the texture, color, size and shape like parameter in an efficient way.
5. **User Data Processing:** The users have to register and upload the captured image for accuracy check. The image is then compared with the standard data set and the results are provide.
6. **Alert and notification:** The stage of skin cancer and the results are provided to the registered user as a message or an email via the registered number or registered mail l'd.

3.SYSTEM CONFIGURATION

3.1 HARDWARE SPECIFICATIONS

Processor : Pentium i3

Ram : 8 GB

Monitor : Color

Hard Disk : 10 GB

Mouse : Logitech

Keyboard : 108 Key

3.2 Software Specifications

Front end : Python

Back end : Python

OS : Windows 10