

Project Design Phase – 1

Literature Survey

Date	15 October 2022
Team Id	PNT2022TMID26285
Project Name	Project -AI-based localization and classification of skin disease with erythema
Maximum Mark	5 marks

1. AI-based localization and classification of skin disease with erythema.

Authors:

Son HM, Jeon W, Kim J, et al Scientific Reports. 2021 Mar 05;PMID: 33674636; PMCID: PMC7935891.

Merits:

- This classification model is more accurate than a baseline model trained without segmentation.
- It is also able to classify multiple diseases within a single image.

Demerits:

- With higher quality and larger quantity of data, it will be more viable to implement this model

2. Performance Evaluation of Deep Learning Techniques for Automated Skin Lesion Diagnosis. 10.13140/RG.2.2.24271.76962.

Authors:

Kamurali, Kenneth & Armah-Sekum, Robert. (2022).

Merits:

- In this project, we evaluate the performance of different pretrained CNN models on the classification of skin lesions into seven different classes of skin cancer.

Demerits:

- The performance of models pretrained on the image net dataset was assessed in classifying skin lesions in a heavily imbalanced dataset.
- The performance of models can be improved by incorporating external datasets.

3. Hierarchical Approach for the Classification of Multi-class Skin Lesions Based on Deep Convolutional Neural Networks.

Merits:

This paper has presented a structured hierarchical classification for multi-class skin lesions based on a deep convolutional neural network system.

Demerits:

With higher quality and larger quantity of data, it will be more viable to implement this model.

4. Dermatologist-Level Classification of Skin Cancer Using Cascaded Ensembling of Convolutional Neural Network and Handcrafted Features Based Deep Neural Network.

Authors:

Sharma, Akhilesh & Tiwari, Shamik & Aggarwal, Gaurav & Goenka, Nitika & Kumar, Anil & Chakrabarti, Prasun & Chakrabarti, Tulika & Gono, Radomir & Leonowicz, Zbigniew & Jasiński, Michał. (2022)

Merits:

This offered model utilizes the convolutional neural network model to mine non-handcrafted image features and colour moments and texture features as handcrafted features.

Demerits:

It does not have accurate prediction.

5.Effects of objects and image quality on melanoma classification using Deep Neural Networks. 10.21203/rs.3.rs-35907/v1.

Authors:

Akkoca-Gazioğlu, Bilge & Kamasak, Mustafa. (2020).

Merits:

- In this study, we investigate the effect of ruler/hair and image blur, noise and contrast on the melanoma detection performance of 4 common CNN models.

Demerits:

- ResNet model is recommended for better recognition of contrast issued in images.
- Sensitive to blur changes, best accuracy is obtained with DenseNet model.