Patent Search

Invention Title	AN EARLY DETECTION AND CLASSIFICATION MODEL OF SKIN CANCER USING DEEP LEARNING ALGORITHMS
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Abstract:

ABSTRACT [1] Skin cancer is one of the most prevalent and potentially life-threatening types of cancer worldwide. Early detection and accurate classification of skin le critical for improving patient outcomes and reducing mortality rates. In this study, we propose a deep learning-based approach for the detection and classification of using digital dermoscopic images. The innovation involves two main stages: lesion detection and lesion classification. In the detection stage, a convolution neural net is trained to identify and localize potential skin lesions within the dermoscopic images. The detection network utilizes transfer learning on a pre-trained CNN architec leveraging features learned from large-scale image datasets. After lesion detection, the localized regions are extracted and fed into another CNN for classification. Th classification network is designed to differentiate between different types of skin cancer, including melanoma, basal cell carcinoma, and squamous cell carcinoma, as benign lesions. The classification model is trained from scratch, allowing it to learn distinctive features specific to skin cancer subtypes. To evaluate the performance proposed method, we use a dataset consisting of thousands of dermoscopic images with expert annotations. The trained detection and classification models are test independent validation set, and their accuracy, sensitivity, specificity, and F1 score are computed. Preliminary results show that our deep learning-based approach ac promising performance in both lesion detection and classification tasks. The detection model demonstrates high sensitivity in identifying skin lesions, while the classi model exhibits robustness in distinguishing between malignant and benign lesions. The overall system demonstrates potential as an effective tool for early skin canc and risk stratification. In conclusion, this study presents a novel deep learning-based methodology for the detection and classification of skin cancer from dermoscop The innovation shows promising results in accurately identifying and categorizing skin lesions, thus holding the potential to aid dermatologists and clinicians in makir informed decisions for skin cancer diagnosis and treatment planning. Further validation on larger and diverse datasets and clinical trials are needed to establish its cl and ensure its integration into real-world healthcare settings.

Complete Specification

Description:FIELD OF THE INVENTION

[2] Our Invention is related to “AN EARLY DETECTION AND CLASSIFICATION MODEL OF SKIN CANCER USING DEEP LEARNING ALGORITHMS”.

BACKGROUND OF THE INVENTION

[3] Skin cancer is a prevalent and serious health concern worldwide, with an increasing incidence rate over the years. Timely and accurate detection and classificati skin cancer lesions are crucial for effective treatment and improved patient outcomes. Traditionally, dermatologists have relied on visual inspection and dermoscop diagnose skin lesions. However, manual assessment can be subjective, and the increasing volume of dermatoscopic images demands more efficient and reliable di tools.

[4] The proposed methodology involves two main stages: lesion detection and lesion classification. In the detection stage, a convolutional neural network (CNN) is t to identify and localize potential skin lesions within the dermoscopic images. The detection network utilizes transfer learning on a pre-trained CNN architecture, lev features learned from large-scale image datasets.

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