A Prototype Design for the Detection of Skin Cancer Types Using Tensorflow

Publisher: IEEE

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Abstract:
Cancer cells that develop abnormally in the regions of the skin are called melanoma. Unusual changes in the skin might be a sign of various cancers because melanoma skin cells are not all identical and they do not usually create many symptoms. The precise and accurate identification of diseases has been a considerable difficulty, but recent developments in computer vision and deep learning have made it possible to meet the following standards. The Proposed methodology is an innovative solution that aids in developing a device prototype for the identification of skin cancer. Different modules of deep learning algorithms have shown tremendous success in classifying various skin cancer conditions. With the help of the deep learning algorithms, that have been trained on a set of skin cancer image datasets using different types of neuron-wise and layer-wise visualization techniques. The model is deployed using the Django web framework for the early identification of skin cancer. The layers in the deep learning network record the colors and textures of lesions specific to skin illnesses upon diagnosis, which simulates human decision-making. These deep learning layers are embedded in the device prototype for the identification of the different types of skin cancer. Thus, a prototype with deep learning systemic algorithms with 97% efficiency is designed for the identification of different skin cancer.

Published in: 2023 IEEE 5th International Conference on Cybernetics, Cognition and Machine Learning Applications

(ICCCMLA)

Date of Conference: 07-08 October 2023

DOI: 10.1109/ICCCMLA58983.2023.10346632

Date Added to IEEE *Xplore*: 18 December 2023

Publisher: IEEE

ISBN Information:

Conference Location: Hamburg, Germany

Contents

Skin cancer is the growth of aberrant cells in the epidermal region; these cells will mutate uncontrollably to become cancerous. These mutations cause the skin cells to proliferate quickly and develop cancerous tumors. In the past, skin cancer has been the most prevalent illness worldwide. Both non-melanoma and melanoma skin cancers have become more common throughout the next decades. UV radiation exposure and chemical contacts are the main causes of skin cancer. According to a recent WCRF survey, skin cancer is the 17th most frequent cancer worldwide. In terms of prevalence, it ranks 15th among cancers in women and 13th among cancers in men. Over the past few centuries, the number of persons with skin cancer has consistently climbed in countries like the United States, Canada, and Australia [1], [2].

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