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| Title | CNN-NSVM architecture for skin lesion classification using non-dermoscopic digital image | | |
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| Abstract |  |
| Skin cancer has become a severe problem for medical diagnosis. The adoption of Artificial Intelligence (AI) in pharmaceutical diagnosis is constantly improving. Lately, AI-based computer-aided diagnostics explications for the diagnosis of skin disease have been of prominent concern. Notwithstanding its importance, skin lesion segmentation inhabits an unresolved difficulty of variability in shade, texture, patterns, and obscure borders. Melanoma, precisely called malignant melanoma, is the deadliest kind of skin cancer. It is much more spread to other body organs if it remains undiagnosed and is not treated early. Hence, early screening has the utmost importance in enhancing the cure probability. The proposed algorithms significantly impacted skin cancer classification until today, but they decayed classification rates while using Non-Dermoscopic Digital Images. This paper presents a new approach of classifying skin lesions from non-dermoscopic digital images using Convolutional Neural Network and Neutrosophic Logic Support Vector Machine (CNN-NSVM) combined approach. CNN extracts the features from the images, and the neutrosophic logic employed with SVM classifies the skin lesion types. The proposed methodology is evaluated on the well-known malignant lesion image dataset from the digital image archive of the Department of Dermatology of the University Medical Center Groningen (UMCG). The obtained accuracy of the proposed algorithm is 91% which outperformed MED-NODE by 10% on a similar dataset. | |