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MELANOMA LESION SEGMENTATION IN DERMOSCOPIC IMAGE USING MULTI-LEVEL FEATURES

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Melanoma is a type of skin cancer that causes to death if it is not diagnosed at its early stage. The digital dermoscopic skin imaging protocol facilitates to develop computer vision algorithm that can automatically analyse the skin lesion to localize the melanoma region and would overcome the difficulties found in the traditional way of melanoma identification in its earlier stage. The accuracy of the localization depends on the robust segmentation of the melanoma region. Though researchers proposed various methods in past years, most of them are showing less accuracy due to the complex architecture of the algorithms and characteristics of data set. Hence this work more focuses on the improvement of the melanoma region segmentation from the dermoscopic image. The proposed segmentation methodology for the automatic segmentation of melanoma skin lesion combines multi-feature such as watershed segmentation, canny edge detection and multilevel thresholding for the robust detection of region of interest and as post processing, the active contour is employed for the refinement of the border of the lesion. Proposed methodology is implemented using MATLAB and tested with the help of publicly available dermoscopic images. The overall segmentation accuracy rate is 92.56%, it shows very promising result for the segmentation. As a future work the classification module will be incorporated for the automatic detection of melanoma.

Keywords: Melanoma, Dermoscopy images, Active contour

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