Abstract

A system for the computer-aided diagnosis of melanoma, provides quantitative and objective evaluation of the skin lesion, as opposed to visual assessment, which is subjective in nature, is comprised of four major components: skin image acquisition, lesion segmentation, feature extraction, and lesion classification. Automatic segmentation of lesions in color skin images, which is the main focus of this paper, is one of the most important steps towards the automated analysis and evaluation of dermoscopy images in the computer aided diagnosis of melanoma. The accuracy of segmentation is highly dependent on the success or failure of each computerized analysis procedure. An improved iterative segmentation algorithm using canny edge detector with iterative median filter, for border detection of real skin lesions is presented, which helps in early detection of malignant melanoma and its performance is compared with the segmentation algorithm using canny detector [1] developed by us previously for border detection of real skin lesions. The experimental results demonstrate the successful border detection of noisy real skin lesions by the proposed segmentation algorithm. We conclude that the proposed, improved iterative segmentation algorithm using canny detector with iterative filtering, segments the lesion from the image even in the presence of noise for a variety of lesions, and skin types and its performance is better than the segmentation algorithm [1] that we have developed previously that uses canny detector, for border detection of real skin lesions.
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An Improved Iterative Segmentation Algorithm using Canny Edge Detector with Iterative Median Filter for Skin Lesion Border Detection

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