ABSTRACT

Psoriasis is a chronic skin condition characterized by the rapid buildup of skin cells, often leading to scaling, inflammation, and discomfort. Accurate segmentation of psoriasis-affected regions in 2D skin images is a crucial step for diagnosis, treatment monitoring, and research. This study proposes an automatic segmentation framework using Convolutional Neural Networks (CNN) for precise identification of psoriasis lesions in 2D skin images.The system employs a CNN-based architecture designed to learn spatial features and distinguish psoriasis-affected regions from healthy skin. Preprocessing techniques, such as image normalization and data augmentation, are applied to enhance the quality and diversity of training data. The CNN model is trained and evaluated on a dataset of labeled psoriasis images, with performance metrics such as Dice Similarity Coefficient (DSC) and Intersection over Union (IoU) used to assess segmentation accuracy.Experimental results demonstrate that the proposed method achieves high accuracy and robustness in segmenting psoriasis regions, outperforming traditional image processing techniques. The automated approach reduces the dependency on manual annotation, ensuring faster and more consistent analysis. This research highlights the potential of CNNs in dermatological image analysis, paving the way for advanced clinical tools to support dermatologists in psoriasis management.

Keywords: Psoriasis, Skin image segmentation, Convolutional Neural Networks (CNN), Medical imaging, Dermatology, Image analysis.