Integrating Wound Location Data with Deep Learning for Improved Wound Classification

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Abstract : Wound classification is a crucial step in wound diagnosis. An effective classifier can aid wound specialists in identifying wound types with reduced financial and time investments, facilitating the determination of optimal treatment procedures. This study presents a deep neural network-based based classifier that leverages wound images and their corresponding locations to categorize wounds into various classes, such as diabetic, pressure, surgical, and venous ulcers. By incorporating a developed body map, the process of tagging wound locations is significantly enhanced, providing healthcare specialists with a more efficient tool for wound analysis. We conducted a comparative analysis between two prominent convolutional neural network models, ResNet50 and MobileNetV2, utilizing a dataset of 730 images. Our findings reveal that the RestNet50 outperforms MovileNetV2, achieving an accuracy of approximately 90%, compared to MobileNetV2's 83%. This disparity highlights the superior capability of ResNet50 in the context of this dataset. The results underscore the potential of integrating deep learning with spatial data to improve the precision and efficiency of wound diagnosis, ultimately contributing to better patient outcomes and reducing healthcare costs.