ERYTHEMA DETECTION IN DIGITAL SKIN IMAGES.

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Abstract:

This work present a 3-layer segmentation scheme for automatic erythema detection. First, a skin region is detected with a histogram-based Bayesian classifier. Next, the extracted skin image is represented in terms of melanin and hemoglobin components based on Independent Component Analysis (ICA). At last, a trained Support Vector Machine (SVM) is applied to identify erythema areas using feature attributes from hemoglobin and melanin component images.

Advantages:

Before psoriasis lesion segmentation from skin is performed with a mixture of two Gaussians. One problem is that initial parameters of Gaussians from training samples often result in slow convergence and unstable recognition accuracy.With features extracted by ICA, SVM classification is applied to classify abnormal redness from normal skin so there will be fast convergence and stable recognition.

Disadvantages:

SVMs are not suitable for large datasets.The complexity of the algorithm's training is highly dependent on the size of the dataset.