ABSTRACT

CLASSIFICATION OF TYPES OF ACNE VULGARIS IN ACNE FACE IMAGE WITH GLCM FEATURE EXTRACTION AND EXTREME LEARNING MACHINE ALGORITHM

Acne, also known as Acne Vulgaris, is a common skin disorder that occurs in the majority of individuals during adolescence, affecting 85% of the teenage population. This condition is caused by hormonal changes that increase sebum production, leading to clogged pores and inflammation. This skin disorder can cause significant impacts, such as scarring and emotional distress. To address the challenges in acne diagnosis, this study proposes a computerized approach involving image processing techniques and feature extraction using the Gray Level Co-Occurrence Matrix (GLCM). The classification of acne types is carried out using the Extreme Learning Machine (ELM) algorithm. This study aims to improve the efficiency and objectivity of acne diagnosis, replacing manual methods that tend to be subjective and time-consuming. This study produces a model from the feature extraction process using GLCM and the training process using ELM for the classification of Acne Vulgaris images. There are five output parameters obtained from the feature extraction results, namely Contrast, Homogeneity, Correlation, Energy, and Entropy. The ELM process successfully classified three types of acne: Nodules, Papules, and Pustules, achieving an accuracy of 73%.
Keywords: Acne Vulgaris, Extreme Learning Machine , GLCM, Acne, Image Processing