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Supervised Learning for acne Tracking Application

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Project Description

The aim of this report is to investigate and compare various supervised learning techniques applied to the problem of acne detection and classification [1].

The process of counting and classifying acne lesions is an important part of the treatment process and can be tedious and may yield inaccurate results if not done properly. As a dermatological problem that affects many people[2], we propose a mobile application that will be able to accurately track the progress of the user. Acne lesions can be classified into several skin types, including comedone, pustule, reddish papule, with or scarring without. [1] As such, speed and image resolution will be a significant constraint.

Much work has been done to solve this problem with various computational techniques[3, 4, 5, 6]. As such, we will consider different types of features and multiple approaches to extract features and to count an classify individual lesions. This process will most likely involve skin detection[7, 8] and other computer vision techniques as a part of preprocessing.

Deliverables

As a part of the report, the following will be produced amongst others:

- A suitable skin detection algorithm.
- A database of labeled images of acne patients referenced from [9]
- Various methods to recognize and classify acne lesions
- Comparison of these methods performace
- A mobile application utilizing the most appropriate method. []

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