Facial mark detection algorithm:

Facial marks are usually manifested as locally prominent regions; thus, a second-order derivative edge detector can be used for their detection. However, the direct application of this type of detector on a face image can generate a considerable number of false positives due mainly to the presence of primary facial features (e.g. eyes, nose, mouth). The location of such features for their subsequent extraction of the facial area is a necessary step for the successful detection of facial marks.

Facial mark matching process:

One of the main objectives proposed in this research was the development of an algorithm to determine the similarity of two face images, based on their facial marks. Consequently, it is necessary to establish a representation of the marks as a first step before starting the matching process.

Timeline

Description automatically generated

Graphical user interface

Description automatically generated with low confidence