Abstract

In this paper, an improved algorithm for detecting the position of a person in controlled environments using the face detection algorithm is proposed. This algorithm ingeniously combines different face detection, occlusion detection algorithms, EMD for facial recognition and SVM classifier. A class room environment with thirty students is used along with some constraints such as position of the camera being fixed in a way that covers all the students, the quasi-static student’s position and the class environment with the fixed lighting conditions. For every class, a set of 6 attributes are derived and updated in a database. The image is given as an input to the face detection algorithm to detect some of the faces. Some faces are not detected because of occlusion, so an occlusion detection technique is implemented to detect all the occluded faces. Using the EMD based face recognition techniques, missing positions are correlated with individuals assuming a quasi-static setup. Experiments have been conducted in different classroom settings and accuracies of more than 96% have been obtained. In this paper lib SVM is used.
Position Detection with Face Recognition using Image Processing and Machine Learning Techniques

Reference

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**Index Terms**

Computer Science

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**Key words**

Face detection

Occlusion

detection

SVM

EMD