Automatic Attendance Management System using Face Recognition

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Abstract: *Face recognition is among the most productive image processing applications and has a pivotal role in the technical field. In the recent time automated face recognition has become a trend and has been developed very much, this is mainly due to two reasons first it is due to availability of modern technologies and second is due to the ability to save time using face recognition in the process of taking attendance of students. Its usage will grow vast in the future as it saves a lot of time. It consumes a lot of time to take attendance manually and few might also fake the attendance, in order to prevent time consumption and avoid faking the attendance. Face recognition is used to identify the person present in the class and mark their attendance , this is done with the help of image or video frame. We proposed an automatic attendance management system using techniques such as PCA algorithm. The face detection and recognition will automatically detect the students in the classroom and mark the attendance by recognizing the person. The traditional process of making attendance and present biometric systems are vulnerable to proxies. This paper is therefore proposed to tackle all these problems. The proposed system makes the use of Haar classifiers, KNN, CNN, SVM, Generative adversarial networks, and Gabor filters. After face recognition attendance reports will be generated and stored in excel format. The system is tested under various conditions like illumination, head movements, the variation of distance between the student and cameras. After vigorous testing overall complexity and accuracy are calculated. The Proposed system proved to be an efficient and robust device for taking attendance in a classroom without any time consumption and manual work. The system developed is cost-efficient and need less installation.*

Keywords: KNN, SVM, VIOLA-JONES, HAAR classifiers, CNN

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