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| **FACE RECOGNITION ATTENDANCE SYSTEM USING RASPBERRY PI**  **ABHISH KUMAR D 2015105502**  **SAKTHI SRI P 2015105528**  **SABARINATH M 2015105558**  **VAISHALI B 2015105566**  ***Under***  **Dr. M. SHANMUGAPRIYA (Asst. Professor, CEG)**  **BACHELOR OF ENGINEERING IN ELECTRONICS AND COMMUNICATION, Department of Electronics and Communication Engineering, College of Engineering, Guindy, Chennai - 25** | | |
| **ABSTRACT**  Attendance for the students is an important task in class. When done manually it generally wastes a lot of productive time of the class. This proposed solution for the current problem is through automation of attendance system using face recognition. This project describes the  method of detecting and recognizing the face in real-time. RaspberryPi 3 model B is used for computation in the detection and recognition modules. This project describes an efficient algorithm using open source image processing framework known as OpenCV.This system is build by five modules Face Detection, Face Pre-processing, Face Training, Face Recognition and Attendance Database.The face database is collected to recognize the faces of the students. The system uses user friendly User interface to maximize the user experience while both training and testing.This project uses (LBP histograms) Local Binary Patterns Histograms for face recognition and uses MySQL to update the database.The system will automatically update the students presence in the class to the students database.  **PROPOSED WORK**  The proposed system is used for taking attendance by using face  recognition and managing the attendance in suitable environments such  as colleges and offices. Raspberry Pi Camera Module V2 attached to  Raspberry Pi3 and it is placed where the people enter the class. Camera  Module is used to capture video from which images of human faces is  extracted.Then face recognition takes place and it automatically verifies withthe existing database through library files present in OpenCV. Face  Recognition is generally more advanced and efficient than other systems.  Another algorithm for Blink Detection is also implemented to avoid  fraudulent cases wherein a static photo can be used to enter attendance  and not by the actual person. | Our framework consists of three major components: 1) External Hardware 2) Data set Creator and Trainer and 3)Graphical User Interface.Over these system  components, the entire algorithm runs in three phases: Data set Creation,Training, Verification and Identification.  **Figure 1: ARCHITECTURE DIAGRAM**  The data set creation phase captures images from the video, detect and crop faces if any and update the database. The images are sampled at frame rates corresponding to the camera’s specifications to avoid uncertainties in image details. The Training phase implements the chosen algorithm to extract elements of interest (the elements which will be  compared) from the detected faces. The verification and Identification phase involves comparison of the detected and trained data to identify the person and hence update the attendance database. The GUI provides an user interface to view the updated data over an Web Application.  **RESULT AND DISCUSSIONS**  The performance of the system in correspond to the user’s interaction with the system and the surrounding environment for different conditions and cases are discussed below | |  | | --- | |  |   **Figure 2:Multiple face detection**    **Figure 3:** **Tracking the eye movement**  **CONCLUSION**  The face recognition was done using LBPH and raspberry pi platform.  To reduce the false-positives drastically and increase the efficiency,  in this research, we are using haar like features and for recognition  of face we are using LBPH This reference design can be used for authentication in banks ,and other public places.LBPH is one of the easiest face recognition algorithms. It is possible to get great results (mainly in a controlled environment). It is robust.  **Student Signature Guide Signature** |