

# Face Recognition Attendance System

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**Abstract:** In this era of information technology authentication is a significant problem. Nowadays the attendance taken in class is by orally and all that attendance is managed by teacher but face recognition system is use for the authentication and to manage all the data of attendance in this system. This paper is to propose one of solution for student attendance system in classroom by face recognition technique. Technique of neural networks to classify the facial objects.

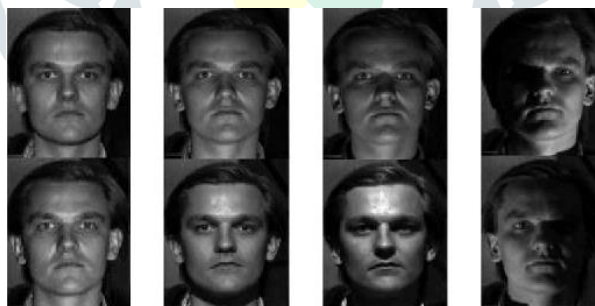
**IndexTerms – Face Detection, Face recognition, Identification, Attendance**

## I. INTRODUCTION

In the day to day life of college and universities the attendance is recorded manually time to time. On regular basis the staff has to maintain the record valid and correct of attendance with proper mechanism. There are two types of student attendance system, i.e. manual attendance system and automated attendance system. Manual attendance recording of large number of students in classroom requires more time to record and calculate of average attendance and this project may lessen the burden of staff. In face recognition attendance system involves the process of extracting key features of face image of the student when student enters the classroom or when everybody are in their seats. A facial recognition system technology is capable for identification, verifying persons face from digital image or video frame of video source. After detection of faces from image system will calculate face features an will compare to already stored database to record the attendance.

## II. LITERATURE REVIEW

The existing system works on SMQT Features and SNOW Classifier Method which is used to train a strong classifier for identifying faces image and judges if the current window contains faces. The existing system uses an elastic neural networks algorithm. As the number of image increases, the correct classification also increases. The system tested all the samples and matched with existing images. This will detects each persons face and identify and process comparison. These systems are less precise .That's why we have to develop this type of system which reduces our time and execute in a rapid manner. There is a need to take special care of the system. In the literature, most authors are focused on face detection and identifying. We developed a system which is effective and used for security purpose and convenient to use.



With the help of our proposed system, we can identify the faces of persons and we are able to recognize the person. Our system architecture is given below:



### III. PROPOSED SYSTEM

As we know in any organization authentication is very important to maintain the security and is mostly applied through taking attendance through various methods such as RFID, Biometrics like Fingerprint Scanners, iris Scanners. The problem with all the conventional methods is that they take much time and user involvement to authenticate the person. As they have interact with the device for scanning the RFID, fingerprint etc. so the purpose of our project is save the valuable time of the attendees and also make it convenient for them. By using Face recognition we can overcome the drawbacks of the other system as Face Recognition Attendance System can Scan Faces from moderate distance by use of a High resolution camera. The system may also scan multiple faces at time to further increase the speed. This system can be installed any where in doorways, classrooms, offices etc.

### IV. COMPONENTS

#### 1. Raspberry Pi

The Raspberry Pi is a low cost, credit-card sized computer that plugs into a computer monitor, projectors or TV. It is small in size so portable and easy to explore computing knowledge. It's capable of doing everything you'd expect a desktop computer to do, from browsing the internet and playing high-definition video and audio. Raspberry Pi has the ability to interact with the world around. The Raspberry Pi is a very cheap computer that runs on Linux, that also provides a set of GPIO (general purpose input/output) pins that allow you to control electronic components for physical computing and explore the Internet of Things (IoT).

#### Specifications and model of Raspberry Pi

- 1GB LPDDR2 SDRAM memory
- 5V/2.5A DC power input (micro USB) power supply
- Wireless connectivity:
- 2.4GHz and 5GHz IEEE 802.11.b/g/n/ac wireless LAN and Bluetooth 4.2/BLE
- Gigabit Ethernet over USB 2.0 (maximum throughput 300Mbps)
- 4 x USB 2.0 ports
- Extended 40-pin General Purpose Input Output (GPIO) header
- Full-size HDMI video output
- 4-pole stereo audio output and composite video port
- Camera Serial Interface (CSI) camera port for connecting a Raspberry Pi camera
- Display Serial Interface (DSI) display port for connecting a Raspberry Pi touchscreen display
- Micro SD port for loading your operating system and storing data
- 0°C to 50°C operating temperature range
- 120mm x 75mm x 34mm dimension

#### 2. Mi Home Security Camera 360 1080p

- With camera angle 110 degree
- connectivity to Wi-Fi 802.11 b/g/n 2.4 Ghz
- 20 megapixels
- AI motion detection alert
- Full HD(1080p)
- Infrared Night Vision

#### 3. Wifi router

### V. CONCLUSION

In this paper, we have proposed a system which is beneficial for detecting the current mood of a person. This system is faster and efficient to recognize facial expression which conveys the emotional state of an individual. The system is reliable and has increasing application areas. The system works on Python which presents a facial expression recognition. In the real world, this system is essential for person identification which is used for authentication.

### VI. FUTURE SCOPE

1. We will propose a system that will be able to recognize and detect the faces in real time and mark the attendance
2. The system will be able to recognize multiple faces at a time
3. It also will be able to work in different conditions and environment

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