

Facial Attendance and Auto Seating Arrangement

Dr. Archana Potnurwar¹, Poras Chahande², Jayesh Nandurkar³, Saurabh Meshram⁴, Pranali Bele⁵,
Bhagyshree Aware⁶

¹Prof., Priyadarshini College of Engineering, Nagpur, Maharashtra

^{2,3,4,5,6}Student at Priyadarshini College of Engineering, Nagpur, Maharashtra

Abstract- Face recognition technology is an important part of today's digital world, and it is used in a variety of different industries. One of the most common uses for face recognition technology is security, identification, and authentication. Although face recognition technology is less accurate than other types of biometric identification, it is still commonly used because it is non-invasive and contactless. Additionally, face recognition technology can be used in businesses, schools, colleges, and other places to track attendance. The goal of this system is to create a face recognition-based class attendance system, as the current manual attendance method is time-consuming and difficult to maintain. Additionally, there is potential for a proxy to show up, which increases the demand for this system.

When the number of students, subjects, departments, and rooms in a school increase, seating management becomes a complex issue. This is especially true when it comes to exams, as there is often a need to seat as many students as possible in a given space.

Maintaining an exam environment with good seating is one of the difficult tasks for institutions. This project provides a solution to seating problems that can be achieved through the execution of a proposed chromatic polynomial algorithm. This project provides a solution for preventing some exam hall plagiarisms by arranging seats for a large number of students and it also finds out the best combination of rooms to be assigned for the exam to organize perfect seating based on the capacity of the exam hall, number of students, and the different subjects being studied. It also has some features to generate reports for absentee's lists using image processing.

The examination has a seating plan with different arrangements for different groups. The seating allocation is based on an algorithm and facial recognition is used to determine who should be seated where.

Keywords: Exam; Seating Plan; Seat Allocation; Algorithm; Facial recognition.

INTRODUCTION

The traditional system of Attendance Marking attendance marking and Exam Seating Arrangement exam seating is a time-consuming process in many schools and universities. It also places an additional strain on the faculty, who must manually call out the names of students, which can take up to 5 minutes

of the entire session. This is time-consuming. The possibility of proxy attendance or representative participation exists. As a result, several institutes began to use various systems for documenting attendance, such as B. Radio Frequency Identification (RFID), iris recognition, fingerprint recognition, recognition, and so on. The term "celebration" refers to the act of celebrating a special occasion.

The goal of this system is to develop an attendance system based on facial recognition algorithms. In this case, a person's face will be used to track attendance. Face recognition is becoming more common and widely used these days. We proposed a system in this study that recognises students' faces from live streaming video of the classroom and records attendance if the identified face is found in the database. This new system will be faster than the current procedures.

The Exam Seating Arrangement System project was created to assist the department in keeping student information current. Previously, records were maintained by hand. With the help of this package, the departments involved will be able to increase productivity, reduce system costs, and reduce time requirements.

The system's automation will assist the company in properly preserving records, using fewer employees, fewer man-days, and less money, and working in a proper and exact manner.

The primary goal of the software was to completely automate the previously laborious process of keeping student information. The development of this package relieved the department in charge of maintaining student information of a significant amount of labour. It increased efficiency while lowering costs and time requirements.

The proposed system is a web-based application designed to organise and manage examination-related procedures in an educational institution. It is a communication improvement application that can be used by both students and faculty at an educational institution. Because it is used on both

desktop and laptop computers, the programme is highly customizable.

LITERATURE SURVEY

A Counterpart Approach to Attendance and Feedback System using Machine Learning Techniques:

In this study, the concept of two technologies, namely the Student Attendance and Feedback system, was developed using a machine learning technique. This system recognises the student's performance automatically and stores data such as attendance and feedback on courses such as Science, English, and so on. As a result, the student's attendance may be made public by identifying the face. Following recognition, attendance and grade information for the student are retrieved as feedback.

B.Face Recognition-based Lecture Attendance System:

In this study, the concept of two technologies, namely the Student Attendance and Feedback system, has been developed using a machine learning technique. This system automatically recognises the student's performance and stores data such as attendance and feedback on courses such as Science, English, and so on. As a result, by identifying the face, the student's attendance may be made public. Following recognition, the student's attendance and grade information are retrieved as feedback.

C.Student Attendance System Using Iris Detection:

In this proposed system, the student is asked to stand in front of the camera so that the system can detect and recognise the iris and mark attendance for the student. To detect the iris, algorithms such as Gray Scale Conversion, Six Segment Rectangular Filter, and Skin Pixel Detection are used. It aids in the prevention of proxy issues and effectively maintains student attendance, but it is one of the time-consuming processes for a student or staff member to wait until the completion of the previous members.

PROBLEM STATEMENT

Systems for facial recognition are extremely sensitive to stance changes.

A minor change in lighting conditions presents a significant challenge to automated face recognition and can have a significant impact on its results.

The current system allocates seating arrangements manually, resulting in a lot of paperwork.

The majority of pupils think it is unfair for Aagean to search their designated exam seat.

EXISTING SYSTEM

A high-resolution digital camera can be used to detect faces, and facial recognition software can be used to register presence by comparing a student's face to one that has already been identified. There are images of faces in the database. When the student's face matches the one in the snapshot saved in the database, your attendance is recorded in the attendance database so that a computation can be made later on. A new photo is saved in the database, the repository of data, if the picture you shot isn't quite right or doesn't match the kids' looks. This method increases the likelihood that the camera won't capture the image properly or that you'll miss the opportunity to get a few children in the frame.

Currently, exam seats are assigned by the course instructors to each student enrolled in the same course. Because the manual seating arrangement is less precise and more prone to errors, it is difficult to maintain exam quality.

Employees and students were manually assigned rooms, which was tedious, time-consuming, and needed more staff and paperwork. To fix these issues, the Exam Hall Seating System was developed.

PROPOSED SYSTEM

The suggested device is designed to take a picture of every student's face and store it in a database for later use. Convolutional neural networks are used in this document. A subset of deep neural networks called convolutional neural networks, or ConvNets, is used in deep learning to analyse visual data.

The student's face must be photographed in such a way that all of the student's facial features, as well as the student's position and posture, can be identified. The teacher no longer needs to personally take attendance in the classroom because the technology records a video, which is subsequently analysed to recognise faces and update the attendance database.

1. USER FRIENDLY

This system makes it simple to retrieve and store data. Moreover, data storage is quick. It is effectively maintained. This system's suggested

graphical user interface is used. It is a more effective system than the one in place.

2. REPORTS ARE EASILY GENERATED

This proposed system makes it simple for users to generate reports such seating arrangements according to their needs and preferences for the course of a month or a day, but not in the middle of a meeting.

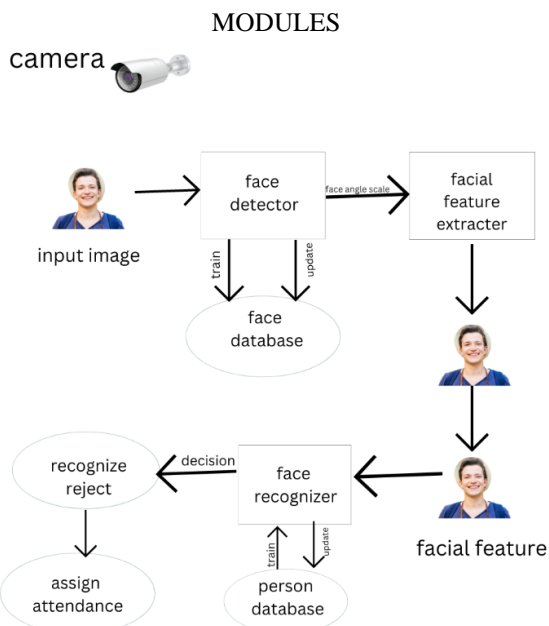
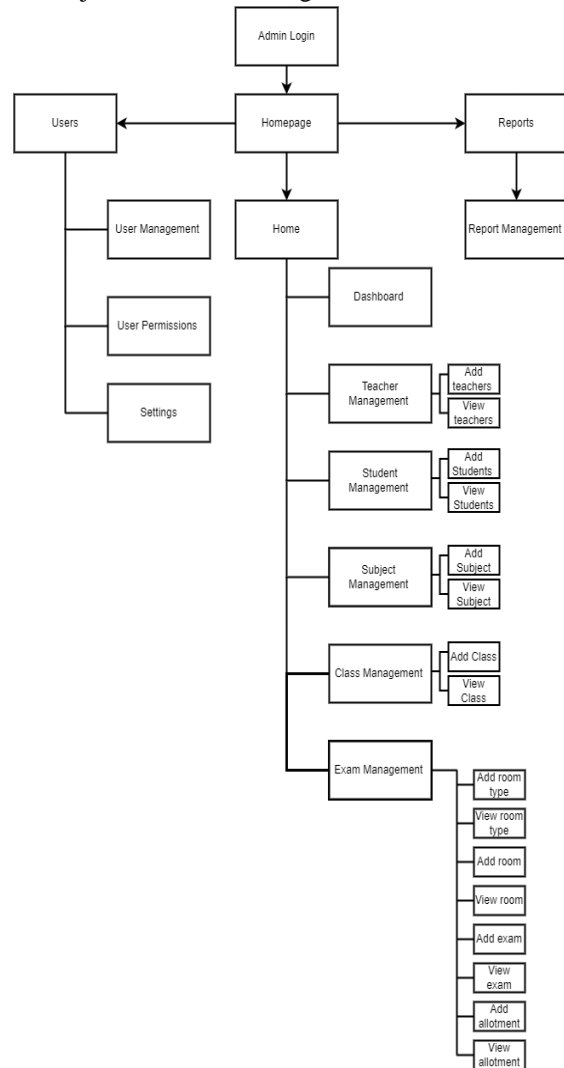
3. VERY LESS PAPER WORK

The suggested system calls for relatively little paperwork. Computers are used to make reports and promptly enter all of the data into them. As a result, the work will be simpler since fewer papers will need to be kept with the data.

4. COMPUTER OPERATOR CONTROL

Because there is computer operator control, errors will occur less frequently. Information storage and retrieval are straightforward. Hence, tasks may be completed promptly and effectively.

- The newly discovered face will be compared to other faces in the database by the face recognizer.
- In this case, the system will either approve or reject the face, marking the attendance.



- Using the face as its subject, the camera will take several pictures of the face.
- These numerous photographs will be subjected to face detection; in this case, the database has been prepared for that specific face.
- The basic facial features of the face are then removed and transformed into eugene faces, which are black and white images.
- The video stream once more takes pictures and compares them with the database when the system needs to take attendance.

RESULT AND DISCUSSION

The primary need of the project is that the camera's captured video be converted into a picture for viewing. Without a known code picture, the system will declare the site to be non-existent.

Capture a Video: A camera is positioned in the classroom at a specified distance in order to capture pre-videos of the ideal students.

Divide as Frames in Video: It is important to convert the recorded video into a self-contained frame per second that can be easily accessed and seen by the students' faces in order to display the audience.

In the face recognition process, the face detection stage entails searching an image that serves as the input (picture) for any faces.

CONCLUSION

The project's outcomes ultimately reduce the demand for staff, student labour, and burden. It benefits all institutions by streamlining the process of allocating exam tasks to the staff and exam rooms to the students. This data is all kept in a single, always-available database. Along with providing better service and more accuracy, it also reduces the need for human labour and wastage of time.

The system's objective is to create a trustworthy facial recognition system for monitoring class attendance. The proposed system will have the ability to track attendance using face recognition. It will identify them after detecting faces using a webcam. After acknowledgment, the attendance record will be updated to reflect the acknowledged student's attendance.

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