VivaDoc:-

My Project topic Name is AI Based Face Recognition Attendance system.

Project contains two webapp's developed using flask and python3

The whole concept is at the time of admission to college or school.

Admin can register teachers using this site.

admin should register the students details such as his name email address and also create training data of each student by entering his roll id and taking snaps of his or her frontal face and then webapp will automatically create model for that particular roll id and save it on server.

Now using teacher's site (It will be used when teacher will actually enter the class), teacher has to login first then teacher will get two tabs that is attendance and report tab. after clicking on attendance tab there will be no back button as teacher will pass on the phone to student.

Then web cam will open. Student's will then have to just click a snap enter class and roll id and press enter to mark their attendance. If face is matched with trained model then only it will mark as present otherwise it won’t. Instead of present it will show spoof is detected. After that there is also a problem of spoof attack in face recognition i.e. someone will show someone's image of face through their mobile phone and trick our webapp and they will mark the attendace of their friends who were not present. But I solved this issue using tensorflow, by training inception to detect mobile phones in an image then I used that model in the webapp as soon as student's click a snap it will first check if the face is spoof or original. Now after student's part is done. Teacher can then login again and then go to report's tab to see attendance. Here there are several options’ I have given. If teacher want to see today's attendance, just select date and time to see the attendance. And there is also an option to download the attendance sheet in excel form. teacher can also see total attendance for his or her lecture. so that they can analyze how many lectures each student from particular class had attended so far.

One additional feature is that teacher can send email for the attendance marked to all the parents as well as students by selecting class and clicking on send mail button.

To generate and manage excel I used xlrx and xlrd and pandas.

For sending email's I used flask-mail

**7.2. Limitation:-**

* The identical twin issue. I am having a challenge of getting different recognitions for twins.

**7.3. Future Scope of the Project:-**

* Automatic attendance system can be improved by increasing the number of features which can be extracted to increase accuracy of face recognition.
* Automating the whole process so that we have digital environment.
* Use the Live face Recognition to recognize each individual and mark their attendance automatically.
* Utilizes video and image processing to provide input to the system
* Automate update in the attendance sheet without human intervention.
* To keep the student update with their attendance ratio.

Why :-

some organizations are taking attendance manually with a sheet of paper by calling their names during lecture hours and some have adopted biometrics system such as fingerprint,

method of calling the names of students manually is time consuming.

in other biometrics such as finger print, iris or voice recognition, they all have their own flaws and also they are not 100% accurate.

Face recognition is more accurate and faster technique among other techniques and reduces chance of proxy attendance.