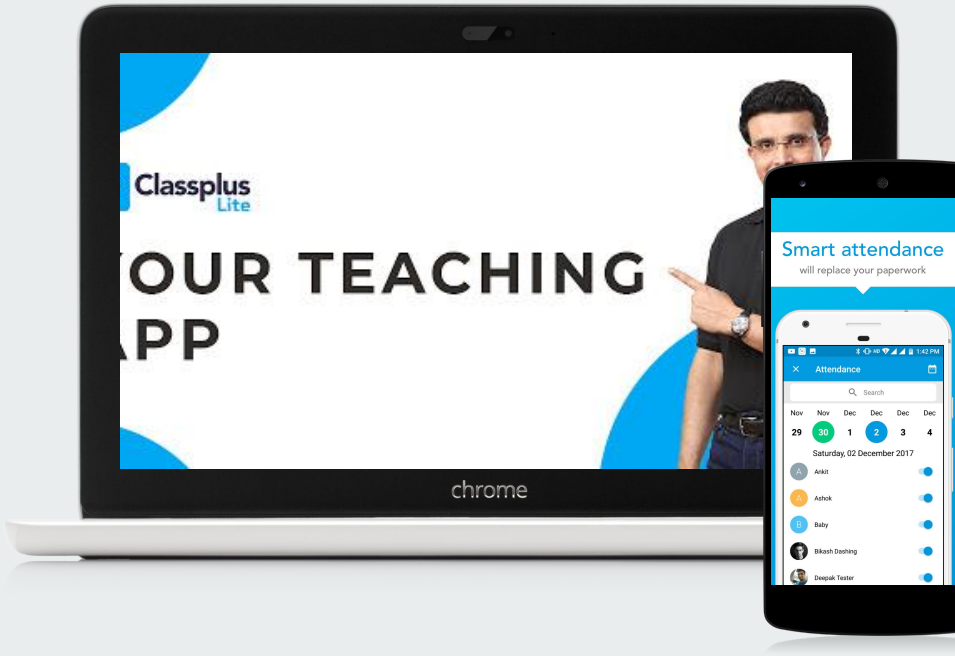
Team DeBeggers

Online Attendance
Using Face Recognition



The Problem

Automated Verification of presence using Face Recognition

Solution Proposal

Use of python face_recognition library and web front and backend

A web client service takes pictures and sends them over to the web server. A python code is run to check the persons face against his pre-trained model.

- The user, during initial registration, he is asked turn on his webcam to get a well lit photograph.
- This photograph is taken and verified, for all the users of a particular domain(domain ->user).
- The image file is then saved to a directory with unique address comprising of student identity.
- Later during classes they are asked to turn on webcam again to take a picture for validation.
- The server uses python face_recognition module to verify and recognise faces.
- This is backed by a well defined data-structure to hold and facilitate fast access.

Cases:

- In case of no face detected, an image is asked for again.
- If it's an incorrect person, they are prompted for a retry (3 times) after which they are marked as absent.
- If multiple face is detected, they are asked to keep only 1 person on the camera frame
- Only upon a proper face detention, the attendance is marked.

Edge Cases:

- We will be using a “random-event verification prompt”
- From a set of random events, a random event to be performed by the attendee is chosen.
- Using facial landmarks we verify if the user is able to perform the event within a given time frame.
- If yes we are assured that it wasn’t a image of the person shown but the person there himself.
- Also because of the time constraint and event being random, user can not use a set of pre taken videos.