**ATTENDANCE SYSTEM USING FACE RECOGNITION**

**REPORT:**

* Images is stored in folders under the names of respective person in the images.
* Then image paths is used to access these images in the folders.
* Using these images, the face locations in every image is calculated using the face locations functions in face\_recognition library.
* Then by using the calculated co-ordinates, the encoding of every face is extracted using the hog algorithm.
* Hog algorithm works on the principle of pythagores theorem.
* In some encoding calculating algorithms, the encoding values is calculated using edges is present or not.
* But here, the edge presence and the direction in which the edge is oriented is also calculated.
* Using this orientation, the vector magnitude is calculated using the pythagores theorem for right-angled triangle.
* Then these values are filled in the pixel matrix of the face location(x, y), and thus the encoding matrix is calculated.
* In the same way all the image’s encoding matrix is found.
* Then these encoding matrices(since there are more than one images for that person)of that certain person is saved in a dictionary along with the person name as the key value.
* This dictionary is dumped into a data file and saved.
* Then using this data file, the person in webcam(live feed) is caculated.
* Here a list is maintained with the key names in the dictionary(person names) to mark the attendance.
* As default, the person’s attendance is absent.
* The live feed is recorded and the frame is extracted from the feed.
* Using this frame, we use hog classifier to find the face locations.
* The face location in the live feed is denoted using the location co-ordinates by drawing the rectangular box and the person name in the feed.
* Then the encoding is calculated, and compared with the encodings in the dictionary.
* The encoding matrices which matches with the current encoding matrix most in terms of count is taken and the respective key is found.
* This key is matched with the names in the list and attendance is marked as present.
* As such, for all the students the attendance is taken.
* At last, using csv writer function the list is exported as a csv file.
* We can import the csv file to check the attendance.

OUTPUT:













