

ABOUT THE SOFTWARE...

Maintaining the attendance is very important in all the institutes for checking the performance of employees. Every institute has its own method in this regard. Some are taking attendance manually using the old paper or file-based approach and some have adopted methods of automatic attendance using some biometric techniques. But in these methods employees have to wait for long time in making a queue at time they enter the office.

Many biometric systems are available but the key authentications are same in all the techniques. Every biometric system consists of enrolment process in which unique features of a person are stored in the database and then there are processes of identification and verification.

These two processes compare the biometric feature of a person with previously stored template captured at the time of enrollment.

Biometric templates can be of many types like Fingerprints, Eye Iris, Face, Hand Geometry, Signature, Gait and voice. Our system uses the face recognition approach for the automatic attendance of employees in the office room environment without employees' intervention. Face recognition consists of two steps, in the first step faces are detected in the image and then these detected faces are compared with the database for verification.

Face recognition techniques can be divided into two types: Appearance based, which uses texture features that are applied to the whole face or some specific regions, and Feature based, which uses geometric features like mouth, nose, eyes, eye brows, cheeks and the relation between them.

SYSTEM DESCRIPTION...

The system consists of a camera that captures the images of the employee and sends it to the image enhancement module. After enhancement the image comes in the Face Detection and Recognition modules and then the attendance is marked on the database server.

At the time of enrolment, templates of face images of individual employees are stored in the Face database. Here all the faces are detected from the input image and the algorithm compares them one by one with the face database. If any face is recognized the attendance is marked on the server from where anyone can access and use it for different purposes.

In this way a lot of time is saved and this is highly secure process no one can mark the attendance of other. Attendance is maintained on the server so anyone can access it for purposes like administration, employees themselves. In order to avoid the false detection we are using the skin classification technique.

Using this technique enhance the efficiency and accuracy of the detection process. In this process first the skin is classified and then only skin pixels remains and all other pixels in the image are set to black, this greatly enhance the accuracy of face detection process.

Two databases are displayed in the experimental setup. Face Database is the collection of face images and extracted features at the time of enrolment process and the second attendance database contains the information about the employees and also uses to mark attendance.

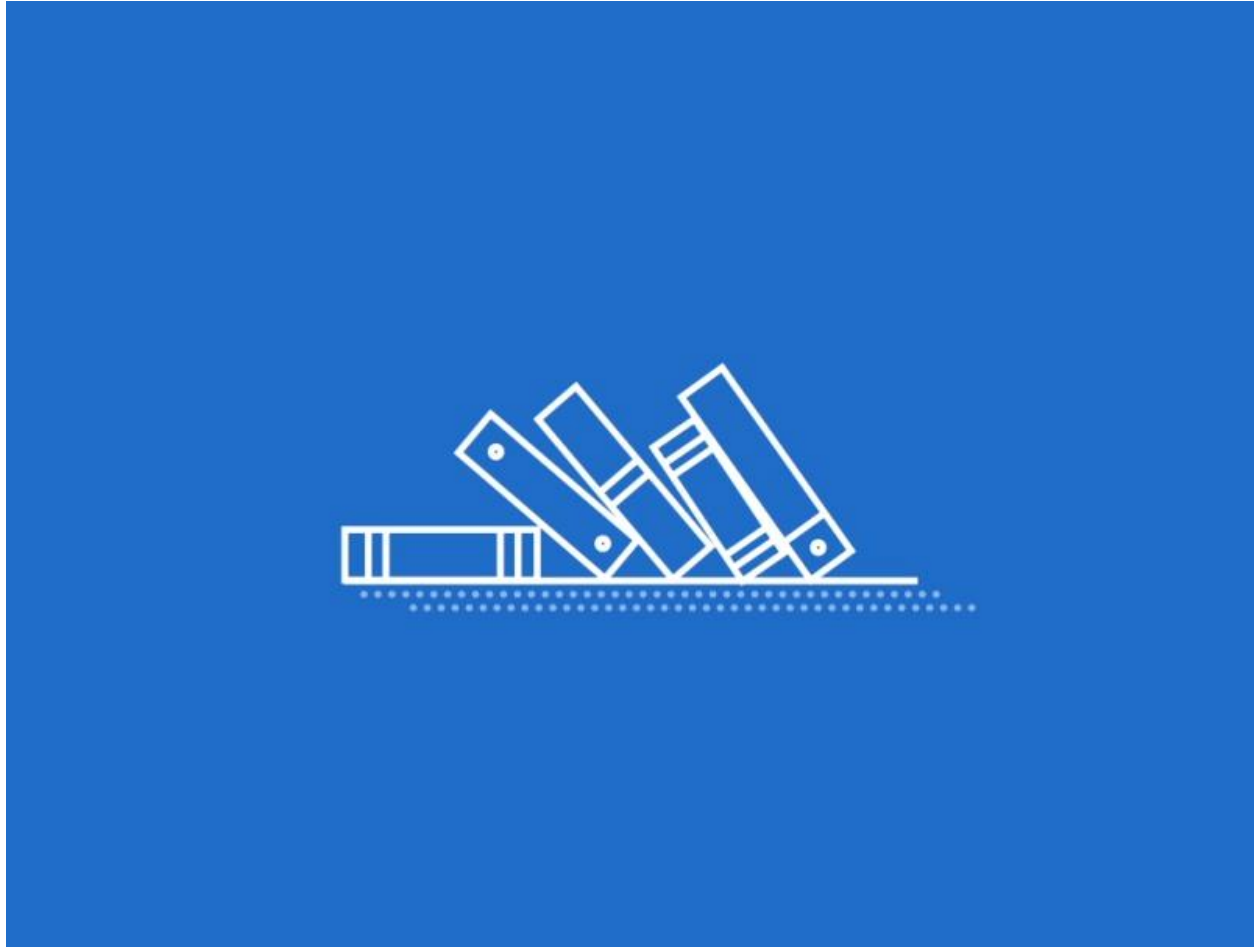
Functioning:

Step 1: Create Dataset



Press this button to create dataset, after pressing this button camera will start automatically and takes some photos of the target for creating its dataset for training. This process is necessary only for the users when they start this software first time. After that there is no need for creating the dataset again.

Step 2: Train the dataset



After creating the dataset, we need to train the software using that dataset. This process is also necessary only for the first time after data creation, so that in future the software automatically detect the target.

After training now the software is ready to use.

In future if someone want to modify the dataset then he can do so by creating new dataset and training the same.

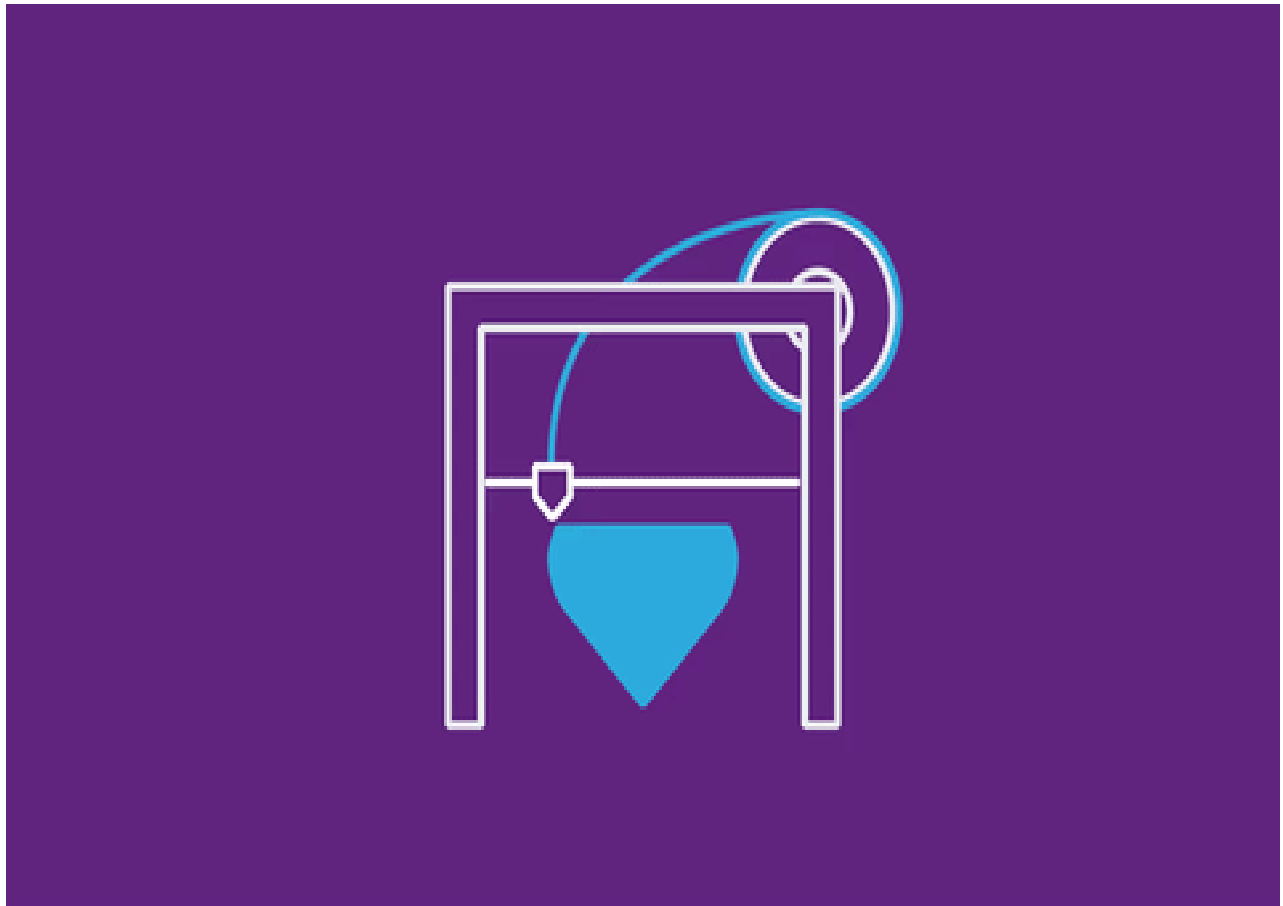
Step 3: Recognition and Attendance



This button is used to take attendance of the target by recognizing the target face. If the dataset of the target is already created and trained in the software then it will recognize it.

When this button will be pressed, camera will start automatically and tries to recognize the target face. If it recognizes the target successfully then it will show the name of the target on the screen and say “Thank you” otherwise “Not Recognized”

Step 4: Attendance Sheet



This button is for showing last active attendance sheet. After pressing this button an excel sheet will open showing the present of target which lastly used this software for marking their attendance.

It is basically a database that acts as attendance register for this face recognition attendance system.

CONCLUSION ...

Automated Attendance System has been envisioned for the purpose of reducing the errors that occur in the traditional (manual) attendance taking system. The aim is to automate and make a system that is useful to the organization such as an institute. The efficient and accurate method of attendance in the office environment that can replace the old manual methods. This method is secure enough, reliable and available for use. No need for specialized hardware for installing the system in the office. It can be constructed using a camera and computer.

DEVELOPER:

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