**PROJECT SYNOPSIS ON**

**FACIAL RECOGNITION BASED ATTENDANCE USING ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**

Project synopsis submitted in partial fulfilment of the Requirements for the award of the Diploma 5th sem.

**FACIAL RECOGNITION BASED ATTENDANCE USING ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**

**[Abstract](https://www.google.com/search?q=What+is+facial+recognition+attendance+system?&sxsrf=AOaemvKxBelFBEPnZ3YpD_kWwZLOFdE5Mw:1640694848008&tbm=isch&source=iu&ictx=1&fir=mCjm4hiCNiZRbM%252CFcxjinIKHN8ZkM%252C_&vet=1&usg=AI4_-kT5o7R8z7gXcuXw-y4M9tHJQhNvvg&sa=X&ved=2ahUKEwjzl-bMwIb1AhUfxzgGHUTSAaMQ9QF6BAgUEAE" \l "imgrc=mCjm4hiCNiZRbM)**

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The face is one of the easiest ways to distinguish the individual identity of each other. Face recognition is a personal identification system that uses personal characteristics of a person to identify the person's identity. Human face recognition procedure basically consists of two phases, namely face detection, where this process takes place very rapidly in humans, except under conditions where the object is located at a short distance away, the next is the introduction, which recognize a face as individuals. Stage is then replicated and developed as a model for facial image recognition (face recognition) is one of the much-studied biometrics technology and developed by experts.

A facial recognition attendance system **uses facial recognition technology to identify and verify a person using the person's facial features and automatically mark attendance**. The software can be used for different groups of people such as employees, students, etc. The system records and stores the data in real-time.

With a face recognition attendance system, **the entire environment is automated**. You won't just take the attendance but also automatically record the entry-exit time of the student. It also adds to the security of the workplace as the system can recognize who left the designated area and when accurately. **Face detection** is a broader term than face recognition. Face detection just means that a system is able to identify that there is a human face present in an image or video. ... Face recognition can confirm identity. It is therefore used to control access to sensitive areas.

**Features:**

* Watchlist-as-a-Service. All facial recognition systems begin with assembling a database of students
* An Airtight Matching Algorithm. ...
* Scalability. ...
* Built-in Privacy Protection. ...
* Predictive Analytics.

**Existing System:**

In the existing system every teacher need call out the names of every student and mark the attendance,then take out all the statistics ,which is a tedious task for every teacher

So, it is very difficult for a recognition system to identify them. These problems can be due system faults used in face recognition, such as **camera distortion, background noise, inefficient storage, improper techniques** etc.

More than that there can be network problems due to environmental conditions.

**Proposed System:**

The **Student Attendance Management System Project In Python** was developed using **Python OpenCV** in **Real-Time**, This **Attendance Management System Project In Python** provide a valuable attendance service for both teachers and students. Reduce manual process errors by provide automated and a reliable attendance system uses face recognition technology.

A **Attendance Management System Using Face Recognition Python** is a simple python script that recognizes faces and mark attendance for the recognized faces in an excel sheet. We seek to provide a valuable attendance service for both teachers and students. Reduce manual process errors by provide automated and a reliable attendance system uses face recognition technology.

**Face Recognition Algorithms**  **used:**

* Haar Cascade
* LBPH (Local Binary Pattern Histogram)

**Hardware Requirement:**

* i3 Processor Based Computer
* 4GB-Ram
* 250 GB Hard Disk
* Internet Connection

**Software Requirement:**

* Windows 8 or higher
* PYTHON INTERPRETER 3.6 ONWARDS
* PYCHARM OR PYTHON IDLE
* EXCEL
* **OpenCV**, **Pillow**, **Pandas**, **Shutil**, **CSV** and **Numpy** are the Python packages that are necessary for this project

MODULES:

* CHECK CAMERA - This module is used for checking the camera and its functionality
* CAPTURE FACES - This module used for capturing and storing faces of all the students
* TRAIN IMAGES - This module is used to train images and recognize images
* RECOGNIZE AND ATTENDANCE - This module is used to recognize and take attendance

