**Unauthorized People Face Detection System**

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**Acknowledgments:** Many thanks to the Collage C S Patel Institute of Technology, CHARUSAT for giving me the opportunity to write a Research Paper on My Project.

Thanks also to DR. PARTH SHAH for leading us through all the sections of this research paper. Without his support it would have been very difficult for me to prepare a meaningful and interesting paper.

With this research paper I learned a lot about Different programming like OpenCV Python, computer vision technology. Language and image processing-based things which is to be needed in it.

**Abstract: - In present times, face recognition has become one of the best technologies for computer vision. The objective of developing Unauthorized People face Detection System is in any private function, school, colleges, and even in our country some Unauthorized people comes and violet the environment of it. So, using this system we can detect that type of people. The system will be built of an existing database and**

**the project is based on OpenCV python Computer vision technology, Machine learning.**

**Keywords: - existing database OpenCV python Computer vision technology, Machine learning.**

# I. INTRODUCTION

The objective of developing biometric applications, such as facial recognition, has recently become important and most usefulness in smart cities. The main objectives of the system are to create a facial recognition system that can be able to catch unauthorized people and detect them. This system focuses especially on the human frontal faces. Multiple face recognition algorithms have been developed and each has its own strength and value. Most of the time we look at a face and can recognize it instant if we are already familiar with the face. This technique is use-full for real time application

That time there are many face detection algorithms. The first one is a local face recognition system, which uses facial features of a face to intimate the face with a person. The second Technique or global face recognition system use the entire face to recognize a person. The above two process have been implemented one to another way by another algorithms. The system first recognizes the face and make fifty copies of it and then save in the database .so whenever any people come, and its entry is in existing data base than the system show to the admin as known otherwise unknown. Face detection is AI-based computer technology that is used to extract and identify human faces from digital images.

In applications that use facial tracking, analysis, and recognition, face detection typically works as the first step and has a significant impact on how sequential operations within the app will perform. Face detection helps with facial analysis by identifying the parts of a video or an image that should be focused on when determining gender, age, and emotions. Similarly, with facial recognition systems (which create “faceprint” maps of facial features), face detection data is included in the system’s algorithms. Face detection technology uses machine learning and algorithms to extract human faces from larger images; such images typically contain plenty of non-face objects, such as buildings, landscapes, and various body parts. Facial detection algorithms usually begin by seeking out human eyes, which are one of the easiest facial features to detect.

Next, the algorithm might try to find the mouth, nose, eyebrows, and iris. After identifying these facial features, and the algorithm concludes that it has extracted a face, it then goes through additional tests to confirm that it is, indeed, a face. To make algorithms as accurate as possible, they must be trained with huge data sets that contain hundreds of thousands of images. Some of these images contain faces, while others do not. The training procedures help the algorithm’s ability to decide whether an image contains faces, and where those facial regions are located.

# II. MOTIVATION & PROBLEM

## STATEMENT

* We have the motivation and innovative idea which we can do and make more effective this project by using for our country .In our country many people comes illegally from other country and stay here. So, using Unauthorized People FaceDetectionsystem we can able to catch that type of people. To create a complete project on Face Recognition, we must work on 3 very distinct phases:
* Face Detection and Data Gathering
* Train the Recognizer
* Face Recognition

### III. ABOUT PROJECT

**1.Scope of the work:** The scope of work defines as following: -

This work aims to design Unauthorized People FaceDetectionsystem to identify Unauthorized People. i.e., In our country many people come illegally from other country and stay here. So, using Unauthorized People FaceDetectionsystem first at the time of taking Aadhar card we recognize the face and it saved in the database.so using this system we can be able to catch that type of people.

**2.System Work:**

1. Image Capture

A camera is placed away from the entrance to capture an image of the front of the student or with traffic signal light. And a further process goes for face detection.

2. Face Detection

The appropriate and effective facial detection algorithm constantly improves facial recognition. Several facial algorithms such as face-to-face geometry, construction methods, Face geometry-based methods, Feature Invariant methods, Machine learning based methods. Out of all these methods Viola and Jones proposed a framework that gives a high detection rate and is also fast. So we chose Viola-Jones face detection algorithm, which uses Integral Image and AdaBoost learning algorithm as classier. We have observed that this algorithm yields better results in a variety of lighting conditions. Its dependents on lighting availability.

3. Database Development

As we choose biometric based system every individual is required. This database development phase consists of an image capture of each individual and extracting the biometric feature, and then it is enhanced using pre-processing techniques and stored in the database

## METHODOLOGY FOR FACE RECOGNITION

The following figure represents the steps involved in the proposed approach in a sequence particular manner:

Input image

Pre-processing

Feature extraction

Classification

Identify the person

### CONCLUSION

#### - The objective of developing Unauthorized People face Detection System is in any private function , school , colleges , and even in our country some Unauthorized people comes and violet the environment of it .So using this system we can detect that type of people .

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