

Identification of Multiple Face Using Machine Learning

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ABSTRACT

The Face Recognition is one of the easiest ways to distinguish the individual identity of each other. Face Recognition is a personal identification system that uses personal features of a person to identify the person's identity. Face is an important part of who we are and how people identify us. It is arguably a person's most unique physical characteristics. Face Recognition Technology has emerged as an attractive solution to address many contemporary needs for identification and verification of identity claims. This Technology can automatically unlock the screen whenever the authorized user approaches the computer. When an image or a video is given as an input, we perform some pre-processing operations by using face recognition module in order to obtain a desired output. Face recognition itself as an algorithm. In this present world, we are identifying the number of human faces in the picture we have given to the application and also, we also demonstrate how to perform real time analysis on frames taken from a live video stream and count the number of faces that appear on screen.

1. INTRODUCTION

The Face Recognition is one of the easiest ways to distinguish the individual identity of each other. Face Recognition is a personal identification system that uses personal features of a person to identify the person's identity. Face is an important part of who we are and how people identify us. It is arguably a person's most unique physical characteristics. Face Recognition Technology has emerged as an attractive solution to address many contemporary needs for identification and verification of identity claims. This Technology can automatically unlock the screen whenever the authorized user approaches the computer. When an image or a video is given as an input, we perform some pre-processing operations by using face recognition module in order to obtain a desired output. Face recognition itself as an algorithm. In this present world, we are identifying the number of human faces in the picture we have given to the application and also, we also demonstrate how to perform real time analysis on frames taken from a live video stream and count the number of faces that appear on screen.

Face recognition has been one of the most interesting and important research fields in the past two decades. The reasons come from the need of automatic recognitions and surveillance systems, the interest in human visual system on face recognition, and the design of human-computer interface, etc. These researches involve knowledge and researchers from disciplines such as neuroscience, psychology, computer vision, pattern recognition, image processing, and machine learning, etc. A bunch of papers have been published to overcome difference factors (such as illumination, expression, scale, pose,) and achieve better recognition rate, while there is still no robust technique against uncontrolled practical cases which may involve kinds of factors simultaneously.

2. OBJECTIVE

The Face Recognition is one of the easiest ways to distinguish the individual identity of each other. Face Recognition is a personal identification system that uses personal features of a person to identify the person's identity. Face is an important part of who we are and how people identify us. It is arguably a person's most unique physical characteristics. Face Recognition Technology has emerged as an attractive solution to address many contemporary needs for identification and verification of identity claims. This Technology can automatically unlock the screen whenever the authorized user approaches the computer. When an image or a video is given as an input, we perform some pre-processing operations by using face recognition module in

order to obtain a desired output. Face recognition itself as an algorithm. In this present world, we are identifying the number of human faces in the picture we have given to the application and also we also demonstrate how to perform real time analysis on frames taken from a live video stream and count the number of faces that appear on screen.

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3. ARCHITECTURE DIAGRAM

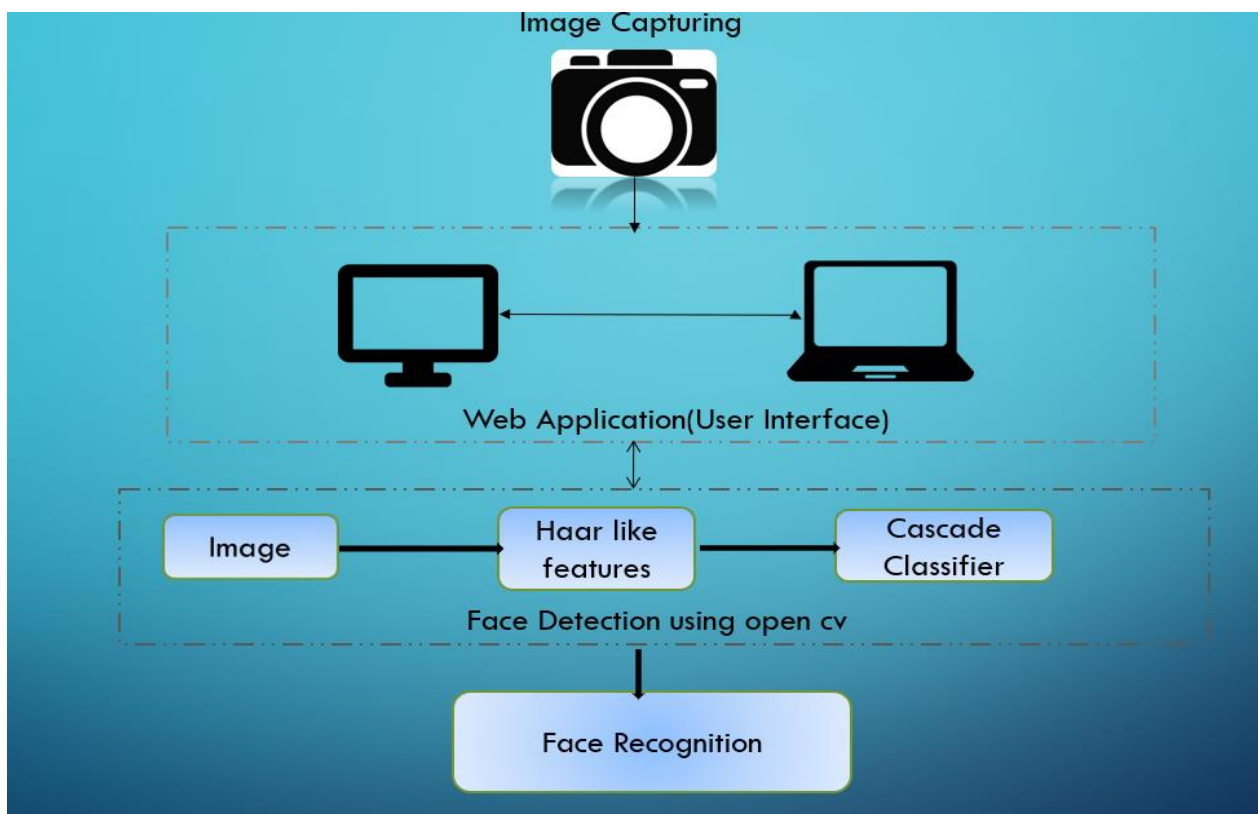


Figure 1: Architecture Diagram Of Existing System

4. PROPOSED METHODOLOGY

This application is done using a technology named python which reduces the code and consists of all the in-built modules.

The applications consist of following modules they are-

1. OPEN CV

OpenCV has been a vital part in the development of software for a long time. The most popular and probably the simplest way to detect faces using Python is by using the OpenCV package.

```

    >>>
    >>> import cv2
    >>>
  
```

2. FACE_RECOGNITION

One such Python library is face recognition. It works in a few steps:

- Identify a face in a given image
- Identify specific features in the face
- Generate a face encoding vector of 128 values

Based on this encoding, we can measure the similarity between two face images — that can tell us if they belong to the same person.

```
>>> import face_recognition
>>>
```

3. NUMPY

It also discusses the various array functions, types of indexing, etc. All this is explained with the help of examples for better understanding.

```
>>> import numpy as np
>>>
```

5. RESULTS and DISCUSSION



Face Detection Using Image

Figure-2: Identification Of Number Of Human Faces In A Group Picture

INDICATIONS

1) GREY LINE

Its calculate the parameters and measure the distance and width based on that it show the required output with count.

FACE RECOGNITION USING WEBCAM

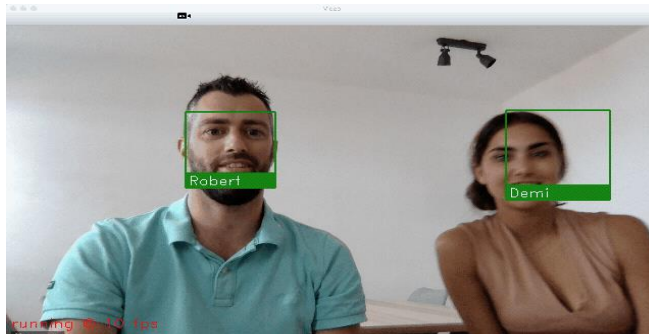


Figure 3: Identification Of Number Of Human Faces Using Webcam

INDICATIONS**1) GREY LINE:**

Its calculate the parameters and measure the distance and width based on that it show the required output with count.

6. CONCLUSION

A face recognition system must be able to recognize a face in many different imaging situations. Face recognition systems are going to have widespread application in smart environments. The propose a human facial recognition identification technique with predefined modules gives the count of faces, count and its coordinates of the faces which are displayed on the screen using webcam. For better classification of extracted features with haar cascade classifiers, Face recognition technique can be further explored to make system identify whether person's is authorised or not.

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