OpenCV face detection and web based Record method and technique

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Abstract: Face Detection is a complex and complicated process because it includes facial Recognition features of the eyes, nose and mouth. Face Detection COVID 19 is becoming necessary for social distillation. Due to the use of different algorithms, face detection has become more powerful, fast,perfect and is being further improved, so it can be used in robots, to catch thieves, to find missing people.

***Index Terms* - Face Detection, Face Recognition, OpenCV, Adaboost, COVID 19.**

I. INTRODUCTION

Face Detection is a branch of computer technology and Artificial Intelligence. It is used in a variety of application that identifies the human face [1] with the help of regular web camera, human face by identifying the face location Identifies by matching digital images present in Database. It is a Simple technique to face perception and Human Machine interaction. This can be seen in technical foresight. So we have to be securing, to catch thief, to find someone who loses, and more. In this paper we will look at his modality and techniques.

II. RESEARCH PROBLEM

The most important question in the terrible disease of COVID 19 is to have social distance and to meet strangers in front of every house or in any institution whether it is small or big and you need to have a record of visitor kid. There are two ways to do this. 1) Software 2) Hardware
This can lead to problems in the following ways:-

- Web Base Project where informing people pictures online.
- Checking the accuracy of train databases as well as pictures of matching people.
- Face Detection where the picture is searched to find a face, then the picture is processed to crop and extract the person face for easier recognition [2].

III. LITERATURE SURVEY

In 1960, scientists (Bladeso, Helen, Charles) began using computers to identify human faces.[4] Before the mid-nineties, work was done on single phase segmentation. In which work was done on a single dimensional image. In 1994, Sung and Pogio used the EBL approach face recognition. Then in 1998 Rowley Etal Recognize face by neural network Approach and then new method came to light. Like-
Face Recognition Vendor Test (FRVT) in 2020,
Face Recognition Grand Challenges (FRGC) in 2006,
Polar Rose Technology-Text surrounding photo in 2007[3].

   A Survey of Face Recognition approach of this paper has different facial recognition methods. Which combines neural networks, geometric features, graph matching methods, agenface and fisherface methods.[4] and A survey on Multiple Face Detection and Tracking in Crowd different face Detection using crowd techniques are available such as Videos face Detection Automatic pedestrians tracking its use to Crowd, Using Images on detecting and segmenting out crowd of humans from still photos.[5] Density-aware person Detection using "scanning-window".[5] some basic and important methods of face detection are Knowledge-based methods also include some rule-based method that encode our knowledge of Images, Template matching methods these algorithms compare the input images with stored images and Appearance- base methods A template matching method whose database is learnt from training images.[6]

IV. METHODOLOGY

AI has come a long way in the last few years; a branch of AI is a computer vision. The following are some of the methods used for face detection.

4.1 Haar like feature

Haar Like feature HLF is a logarithm that measures the distance between the face of the structure of the rectangle with the help of pixels between the eyes, nose, and mouth.
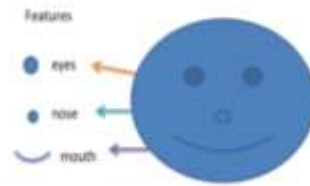

Fig4.1.1. Block Diagram in Haar Like feature

4.2 Adaboost

Adaboost is a algorithm which both choose the best highlights and prepares the classifiers in utilized.[6] [7] Adaboost is solving the binary Classifier Problem; its train the model using the weight sample. Only binary (two-class) classification problems are supported, so each weak classifier makes one decision on one input variable and outputs a +1.0 or -1.0 value for the first or second class value. The average weight of the weak classification is calculated and predicted. [8]

4.3 Knowledge-Based Approach:

By encoding the photo using the rule-based method, we can convert the photo into a byte and store it, thus increasing the knowledge of ordinary computer. In this approach taking the photo in RGB from, we are taking its features using common technique; a face image with two eyes, nose, mouth structure etc. the encoding features relationship distance between the real images encoding features and the stored images (train Data).
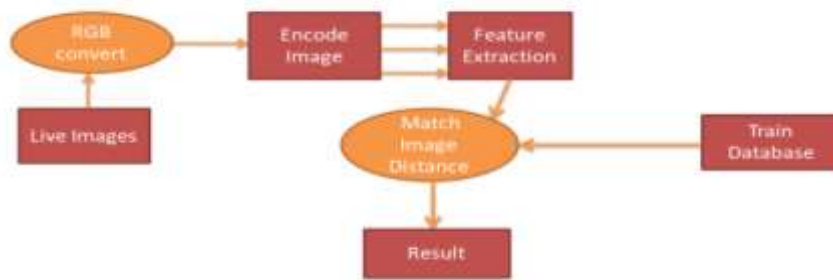

Fig 4.3.1: DFD for Knowledge based Approach

V. EXPERIMENT RESULT

Font- End:

In online projects we use HTML, JavaScript, PHP In which it has possible to started a new session, show, edit and change the records.

Fig 5.1: Web Camera Detection

Fig 5.2: Online Webpage Display record

Back-End:

Open CV is used in the back-end process after the coding of the Python used in MySQL database. We have completed the test using various matching algorithms as well as data training.

VI. APPLICATION

With the help of a web camera, we can access a picture or a video. Face reorganization is also used as a biometric. Some cameras can measure the temperature by placing a temperature machine or using thermal cameras. Autofocus picture can also remove this screen-short. Also, using the camera algorithms, you can operate like zoom and crop, and you can store all the data online and offline.

CONCLUSION

Face recognition and image processing is a challenging way to developed the system. It can be used in many areas. These new types of face recognition algorithms will be released in the future. Some of techniques and methods are being used here and a lot of different techniques, Algorithms and methods will be use in future. This is a primary step in face detection to maintain and increase the accuracy.

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