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Criminal Identification System using Face Recognition

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Abstract: *In practice, fingerprint identification is used to identify criminals in Malaysia. However, this method of identification is limited because most criminals are becoming more adept at avoiding leaving their thumbprint on the scene. Cameras, particularly CCTV cameras, have been put in numerous public and private spaces to provide surveillance operations since the emergence of security technology. CCTV footage can be used to identify suspects on the spot. The law, however, enforces thumbprint identification due to restricted software designed to automatically detect the similarities between photos in the tape and recorded photos of criminals. An automatic facial recognition system for criminal databases was proposed in this study using the well-known Java programming language.This technology will be able to automatically detect and recognize faces. If there is no thumbprint on the scene, this will aid law enforcement in detecting or recognizing the suspect.*

Keywords: Criminal Identification, Face Recognition

I. INTRODUCTION

Face recognition is one of the few biometric technologies that is both accurate and non-intrusive. Since the early 1970s, scholars in fields ranging from security to image processing to computer vision have been fascinated by face recognition. Face recognition has also proven useful in multimedia data processing.Face recognition attempts to identify a previously identified object as either a known or unknown face. Face recognition and face detection problems are commonly confused. A database of faces, on the other hand, is used to validate the input face in order to establish whether it belongs to a known or unknown person. The main goal of this project is to use a Neural Network to construct an efficient when playing films, architecture for facial recognition The Accelerated Segment Test incorporates two self-contained Neural Networks (CNNs) for finding and recognizing faces in locations with a dense collection of information (FAST). Detecting whether a person's face image matches any of the face images stored in a database. This challenge is challenging to address automatically due to the changes that various components, such as facial expression, ageing, and even lighting, can cause on the image. Although facial recognition is not the most reliable biometric method, it has a number of advantages over the others. Security and access control, forensic medicine, police controls, and attendance management systems are just a few of the uses. The following are the numerous approaches for marking people: 1) System based on signatures 2) System based on fingerprints 3) Iris Detection 4) System based on RFID 5) Recognition of faces Face Recognition, among the approaches mentioned above, is natural, simple to apply, and does not require the test subject's assistance.

It consists of a set of connected tasks that are solved in order: 1. To take a picture and identify all of the people in it. Concentrate on one face at a time, and remember that even if a face is twisted in an unusual direction or illuminated in poor light, it is still the same person. 3. Identify numerous distinctive elements of the face that can assist distinguish it from the faces of others. These traits could include the size of the eyes, nose, face length, skin color, and so on. 4. To figure out the person's name, compare these distinguishing aspects of that face to all the faces of people we already know. As a human, our brain is designed to execute all of this naturally and instantly. Because computers are incapable of such high-level generalization, each stage of face recognition must be taught or programmed separately. There are two types of face recognition systems: verification and identification. Face verification is a 1:1 match that compares a face image to a

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template face image to verify a person's identification. Face identification, on the other hand, is a 1: N issue that compares two query face images.

II. RELATED WORK

Criminal record usually contains personal information concerning explicit person alongside photograph. To spot any Criminal we need some identification related to person, that are given by viewer. In most cases the standard and backbone of the recorded image segments is poor and hard to identify a face. To beat this drawback, we tend to are developing code. Identification can be done in various ways like finger print, eyes, DNA etc. One in all applications is face identification. The face is our primary focus of attention in social inters course taking part in significant role in conveying identify and establishing emotion. Though the power to infer intelligence or character from facial look is suspect, the human ability to acknowledge face is outstanding. [1] Associate Degree implementation of principal component analysis for face recognition, the second International Conference on Applied Science and Technology 2017 In this paper, an automatic face recognition system for criminal info was proposed using known Principal Component Analysis approach. This technique are going to be ready to discover face and recognize face automatically. This can facilitate the law enforcements to detect or recognize suspect of the case if no thumbprint presents on the scene. The results show that about 80. [2]Proposed system is goes to spot criminals at numerous security place like airdrome, railway etc. Video Camera captures a hard and fast range of frames of a person coming in front of sign on counter. Proposed system compares these captured pictures taken through the camera with the pictures of the Criminals which are stored in the database. Proposed system is connection of two stages Face detection using Hear Based Cascade classifier and recognition using Principle Component analysis with Eigen Face. The goal is to implement the system (model) for a selected face and distinguish it from an oversized range of stored faces with some period of time variations as well.]3] The objective of this paper is to assess confront discovery and acknowledgment procedures and provides a complete image based mostly face location and acknowledgment with higher truth, higher reaction rate associated an underlying advance for video observation. Arrangement is planned in light of performed tests on totally different face made databases as so much as subjects, stance, feelings and light. [4] Person identification using face is incredibly exigent and knotty drawback. Recognition of a person from an arbitrary perspective is crucial necessities for security measures and access management. Recognition of a specific face may be useful for countless issues like person laptop interaction, criminal detection, etc. The present system has additional calculation because of higher dimensional and no more effectual still. Rather than feat of face vectors with high specialty it is higher to use face vectors with lower specialty. This en- forced face recognition system is easy and comparatively simple to recognize the faces from videos taken from a distance and web cams. The improved PCA rule removes facial expressions and classification is performed by minimum distance classification. [5] In this paper, from a different perspective, we consider enlarging the inter-class variance by directly penalizing weight vectors of last fully connected layer, which represent the center of classes. To the end, we propose Orthogonality loss as an elegant penalty item appends to common classification loss to learn the discriminative representations. The main idea is that in order for weight vectors to be discriminative, it should be as close as possible to be orthogonal to each other in the vector space. More specifically, the optimization objective of Orthogonality loss is the first moment and second moment of cosine similarity of weight vectors. We performed the empirical studies through simulating the long-tail datasets to show the generalization ability of the proposed approach on long-tail distribution datasets. Further, extensive experiments on large-scale face recognition benchmarks including the Labeled Face in the Wild (LFW), the IARPA Janus Benchmark A (IJB-A), IJB-B, IJB-C, MegaFace Challenge 1 (MF1) and MS-Celeb-1M Low-shot Learning demonstrated that Orthogonality loss outperforms strong baselines, which showcases the extensive suitability and effectiveness of Orthogonality loss[6].S. L. Bangare et al. [7-13] have worked in the brain tumor detection. N. Shelke et al [14] given LRA-DNN method. Suneet Gupta et al [15] worked for end user system. Gururaj Awate et al. [16] worked on Alzheimers Disease. P. S. Bangare et al [17-19] worked on the object detection. Kalpana Thakare et al [20-25] have worked on various machine learning algorithms. M. L. Bangare et al. [26-27] worked on the cloud platform. Rajesaheb R. Kadam et al [28] and Sachindra K. Chavan et al. [29] have discussed security issues with cloud.

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III. PROPOSED SYSTEM

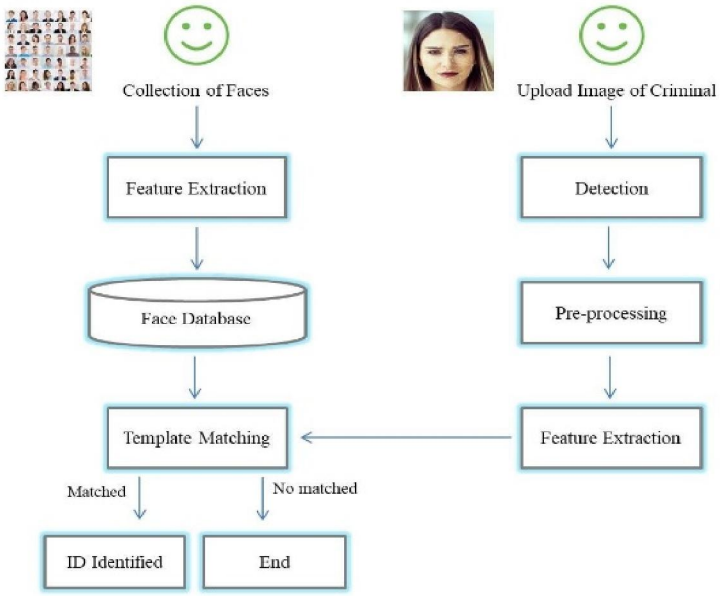

Fig.1 Proposed System

IV. RESULTS

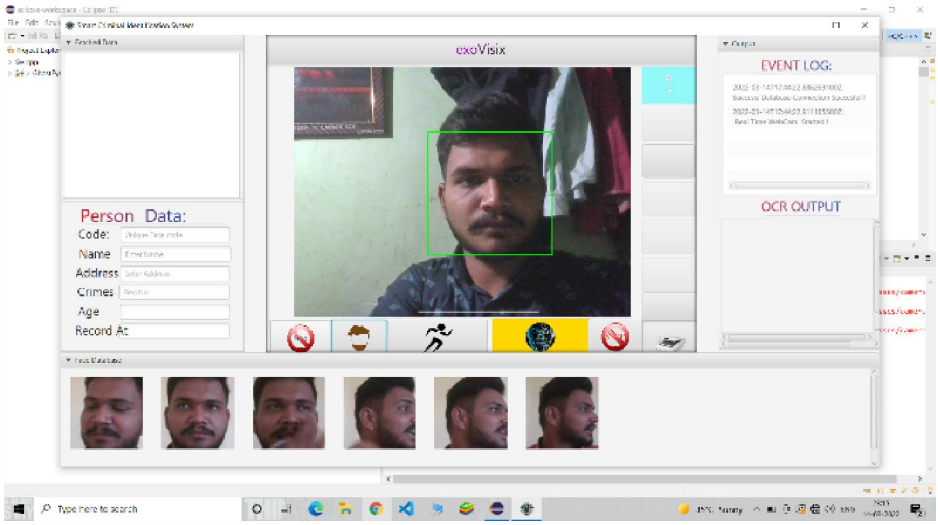

Fig.2 Add Person Data

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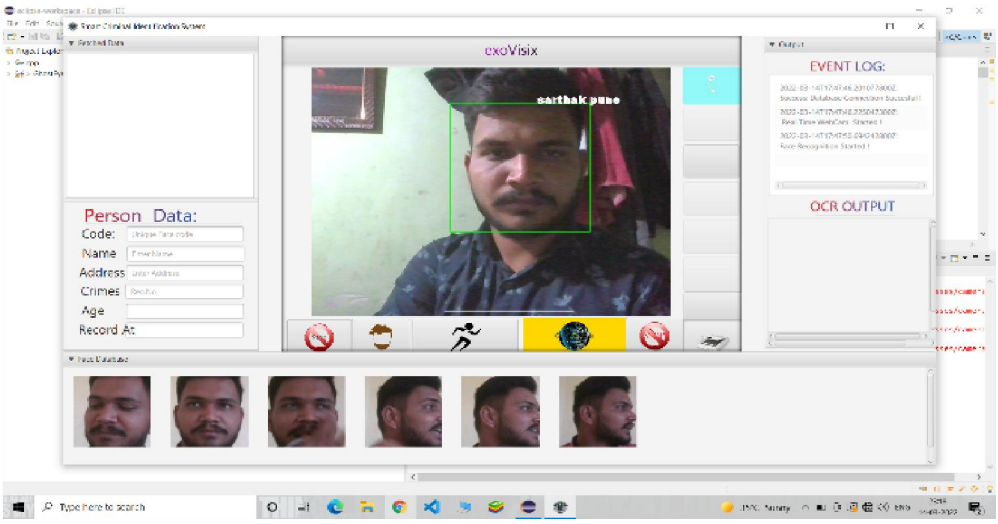

Fig.3 Criminal Identified

V. CONCLUSION

We utilised this technology to create a criminal identification system that will employ face recognition to track down offenders. You'll save time and effort, especially if you're heading somewhere social. The Automated Criminal Identification Approach seeks to correct shortcomings in the old (manual) approach. This system shows the application of image processing methods in public places. This technology has the ability to help not just criminal investigations, but also the government's reputation.

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