International Journal of Future Generation Communication and Networking
Vol.14, No. 1, (2021), pp. 4478 - 4482

Face Recognition for Criminal Identification using Deep Learning

Shivam Kangle [1], Somesh Gond [2] , Shubham Gond [3], Kokila.Kasture[4] ,Pallavi Sawant[5]
[1,2,3] Student,[4,5] Faculty, Department of Electronics and Tele-communication Engineering, Smt.Kashibai Navale College of Engineeing,Vadgaon,Pune.
[1]shivamkangle941@gmail.com [2]someshgond12@gmail.com [3]shubhamgond84@gmail.com
[4]krkasture_skncoe@sinhgad.edu [5]pallavi.msawant_skncoe@sinhgad.edu

Abstract

Criminal identification has received much attention since it is a fundamental task in intelligent surveillance systems. In Malaysia identification of criminal is done through thumbprint identification. Criminal are very clever nowadays they do not leave their thumbprint on the scene and also evidences on the crime scene. With the advent of security technology, surveillance cameras installed in many public and private areas to observe surveillance activity. The footage of the surveillance camera can be used to identify suspects on scene. The proposed criminal identification system automatically detects the similarity between photo in the footage and recorded photo of criminals, based on facial recognition using CNN algorithm. The proposed method helps the law enforcements to detect or recognize suspect of the case if no thumbprint present on the scene.

Keywords: *criminal identification, face recognition, python, etc*

I. INTRODUCTION

Face recognition is one of only a handful few biometric techniques that have the benefits of both accuracy and low intrusiveness. For this reason, since the early 70s, face recognition has importance in fields of security, image processing and computer vision. Face recognition has also proven useful in public places. Then again is to choose if the face is somebody known, or obscure, utilizing for this reason a data base of faces to approve this input face. This project main aim is to create an efficient architecture for face recognition in playing videos using Alex net. This product which two self-contained Alex net which are used to detect and recognize faces in regions containing a dense grouping of features from Accelerated Segment Test (FAST). Compares the image of any given person matches any of the face images stored in a database. This problem is difficult to solve automatically due to the changes that various factors, such as face extraction, can cause on the image. Facial recognition may not be the most reliable Among these various biometric techniques but it has several advantages over them. It is widely used in various areas such as security and public places, police controls and in attendance management system. Face Recognition is easy to use. It is a series of several related problems which are solved step by step: First step is Concentrate on one face at a time and understand that even if a face is turned a weird way or in terrible lighting, it is as yet unchanged individual. Second step is deciding different interesting highlights of the face that can help in distinctive it from the essence of some other individual. These attributes could be components of the appearances. And third step is comparing these distinctive features of that face to all the faces of people we already know to find out the person's name. We have to do best code for this system. Face recognition systems fall into two categories: extraction and recognition. Face verification thinks about a face picture against a format face pictures, whose character is being guaranteed. Actually, face identification analyses a question face picture.

II. RELATED WORK

ISSN: 2233-7853 IJFGCN

In Criminal Face Identification System[6] ,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. Much of the time the norm and spine of the recorded picture portions is poor and difficult to recognize a face. To beat this disadvantage, we tend to are creating code. Distinguishing proof should be possible in different manners like finger impression, eyes, DNA and so on a face is turned a peculiar way or in awful lighting, it is as yet unchanged individual. 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. Despite the fact that the ability to construe knowledge or character from facial look is suspect, the human capacity to recognize face is remarkable.

An automatic face recognition system for criminal information was proposed using known Principal Component Analysis approach [7].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 present on the scene.

E-crime detection using face recognition system is goes to spot criminals at numerous security place like airdrome, railway etc. video camera catches a rigid scope of casings of an individual coming before sign on counter. Proposed framework analyses these caught pictures taken through the camera with the photos of the Criminals which are put away in the data set. Proposed framework is association of two phases Face location utilizing Hear Based Cascade classifier and acknowledgment utilizing Principle Component investigation 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.[8]

In Crime Identification using 3-D Face Recognition, is used 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 [9]. Arrangement is planned in light of performed tests on totally different face made databases as so much as subjects, stance, feelings and light. 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 speciality it is higher to use face vectors with lower speciality. 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 [10]. In this paper, we proposed a criminal identification system using deep learning concept.

III.SYSTEM ARCHITECTURE

In this paper, System proposes a Criminal Detection through Face Recognition. To beat the disadvantages that were in the existing system we foster a system that will be exceptionally helpful for any examination division investigation department.

ISSN: 2233-7853 IJFGCN

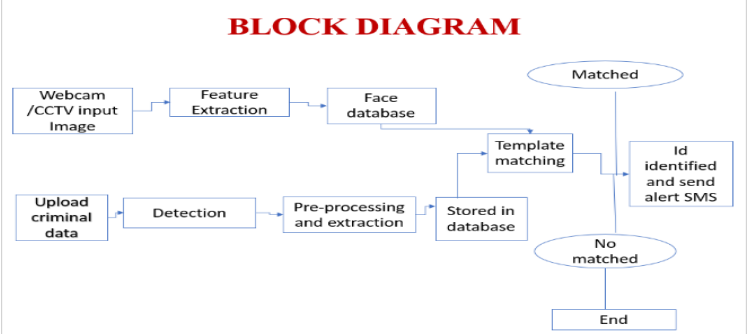

Fig.1 Criminal Identification System

Figure 1 shows the proposed criminal identification system, input face is taken by using webcam ,and all criminal images is uploaded in database. next step is we pre-processing and extraction of features of face images and it compare with the webcam image if feature is matched then criminal is detected and send alert message to near police station.

ALGORITHM:

K-mean Clustering Algorithm

Input: K- the number of clusters

Dataset: a data set containing n objects

Output: A set of k clusters

Step 1: Randomly select k data objects from dataset D as initial cluster centers.

Step 2: Repeat

Step 3: Calculate the distance between each data object di (1 ¡= i ¡= n) and all k

cluster centers cj (1 ¡= j ¡= k) and assign data object di to the nearest cluster.

Step 4: For each cluster j (1¡=j¡=k), recalculate the cluster center.

Step 5: Until no changing in the center of clusters.

The computational complexity of the algorithm is O(nkt)

Where, n: the total number of objects

k: the number of clusters

t: the number of iterations

ISSN: 2233-7853 IJFGCN

IV.RESULT

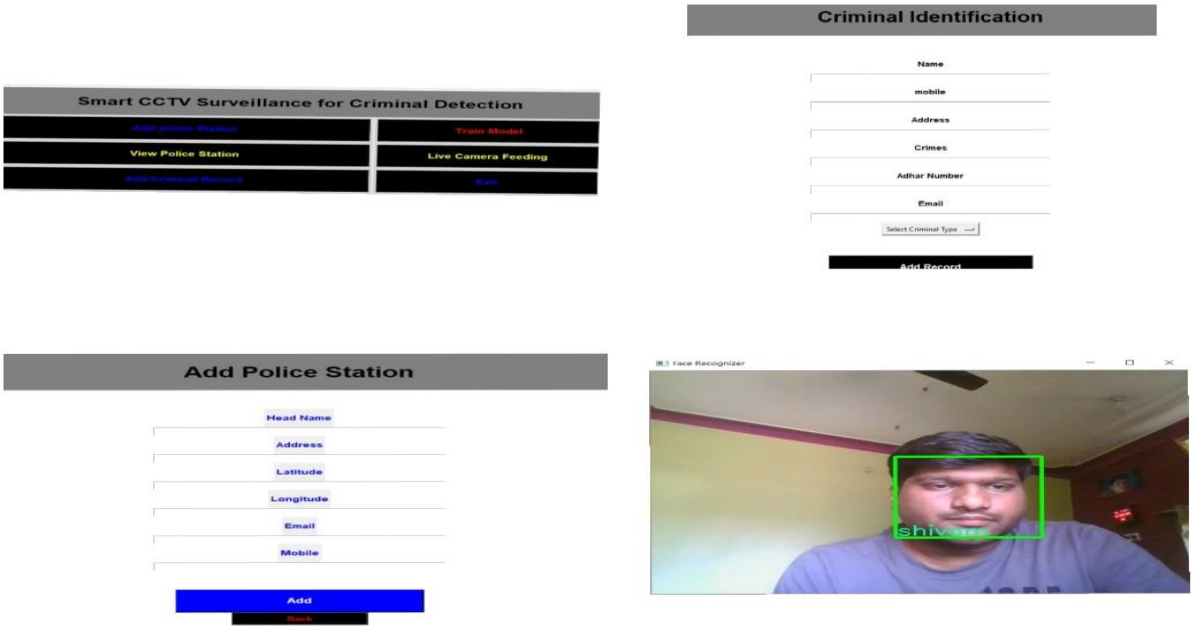

Fig.2 Result

V.CONCLUSION:

In this system we execute criminal identification system, which will record crooks as per face acknowledgment. It will save time and effort, especially if it is a social place. Automated criminal recognition System has been imagined to lessen the disadvantages in the conventional (manual) system. This system demonstrates the use of image processing techniques at public places. This framework cannot just simply help in the criminal examination framework, yet additionally improve the generosity of the public authority.

REFERENCES

[1]Yang Yang, Zheng-Jun Zha, Heng Tao Shen and Tat-Seng Chua, “Robust Semantic Video Indexing by HarvestingWeb Images”, S. Li et al. (Eds.): MMM 2013.

[2]Chih-Chin Lai; Ying-Chuan Chen, “A User-Oriented Image Retrieval System Based on Interactive Genetic Algorithm”, IEEE Transactions on Instrumentation and Measurement, Volume: 60 , Issue: 10, 2011.

[3]Beecks, C.; Uysal, M.S.; Seidl, T., “A comparative study of similarity measures for content-based multimedia retrieval”, IEEE International Conference on Multimedia and Expo (ICME), 2010.

[4]Lin Lin; Chao Chen; Mei-Ling Shyu; Shu-ChingChen “Weighted Subspace Filtering and Ranking Algorithms for Video Concept Retrieval”, IEEE Multimedia, Volume: 18 , Issue: 3, 2011.

[5]Sujatha, S. S., “Survey Paper on Various Methods in Content Based Information Retrieval”, International Journal Of Research In Engineering & Technology, 2013.

[6]Mayuri S. Takore, Pallavi R.Wankhade, “Criminal Face Identification System” February 2015

[7]Nurul Azma Abdullah, Md. Jamri Saidi, Nurul Hidayah Ab Rahman, Chuah ChaiWen, and Isredza Rahmi A. Hamid, “Face recognition for criminal identificationAssociate Degree implementation of principal component analysis for face recognition”, The second International Conference on Applied Science and Technology 2017

ISSN: 2233-7853 IJFGCN

[8]E-CRIME DETECTION Using FACE RECOGNITION SYSTEM 8616 Volume three, Issue 2 April 2014.
[9]Prarthana Sandip Patil, Pournima Paman Patel, Snehal Prakash Sonar, Chaudhari Vrushali Kishor, "Crime Identification using 3-D Face Recognition", International Journal of Emerging Technologies in Engineering Research, 2018.
[10] Ashutosh Chandra Bhensle, Rohit Raja, "An Efficient Face Recognition using PCA and Euclidean Distance Classification", IJCSMC, 2014.

ISSN: 2233-7853 IJFGCN