Finding Missing Person Using AI

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Abstract: - Nowadays to find a missing person is very hard task, although we all are updated by social media, it requires numerous paper work to be done and it is time consuming process and also after doing this hard work, there are not much chances of proper result. This project gives out a system, which helps both police department and public by speeding up the process of searching using face recognition. Therefore, how this system works is that when the person goes missing the respective guardian of that person can upload the image, which then will get store in our database. Next is, the face recognition model in our system will find a match of that person in the database. If a match is found, it will be notified to the police and the guardian of that person.

I. INTRODUCTION

As we know today, we mostly use face to recognize the person and as the technologies are getting best day by day in the ability of face recognition and detection effortlessly. Face Recognition/detection is a distinctive technology which has grown speedily in recent years. The aim here is to build a project to find missing person, which will be very convenient to common people as well as police department so that they can find their loved ones within short span of time.

In our project, we come up with the entire database of the missing person, so that the police can trace about the missing person or the guardian can file a case concern to the issue, also person can upload an image of the missing person.

This image will collate with the images in the database and result will be displayed.

II. LITERATURE SURVEY

We did lot of survey and summed up following regarding literature survey. So firstly, Students from Centre for development of advanced computing named Pournami S. Chandran and his team gave out a paper, which had same objective. They used Deep Learning (CNN) constructed Facial features extraction with the help of SVM.

Secondly, in year 2016, Rohit Satle and his team handed out a paper, which says about a face recognition system built using Principal Component Analysis (PCA) method.

Third, Swarna Bai Arniker and the team had given a paper, which labels missing people identification system using RFID Technology.

Fourth, Birari Hetal and his team have presented a paper where they have used SWF-SIFT to compare faces. However, SIFT is computationally heavy and therefore costs lots of time.

As in 2015, Thomas M. Omweri and Andrew M. Kahonge have given out a paper where they put forward a system that uses mobile-based web service to search missing person.

In 2016, Prof. Sumeet Pate and his colleagues presented a paper which shows the use of the Line Edge Method (LEM) for face recognition to find missing people.

Lastly, in year 2018, Peace Muyambo from Zimbabwe suggests a face recognition system to find missing people in Zimbabwe, which used the LBPH method to recognize, face.

III. PROBLEM STATEMENT

Physically it takes huge time, as it is lengthy procedure for finding missing person as it increases time to launch an FIR in police station. Also during handy process workforce for searching missed person is not so great and due to this half of the cases remain mysterious. Few existing application does not convey the proper information about the lost person, which is, they only give the database of missing person. In some amusement parks and other public places, they use RFID chip

for searching people. To overcome from this, we have proposed new system in which we will also add image of person so that it will be easy to find.

IV. PROPOSED SYSTEM

The proposed system makes use of various methods for finding missing peoples. The structure of our system is presented in figure.1.
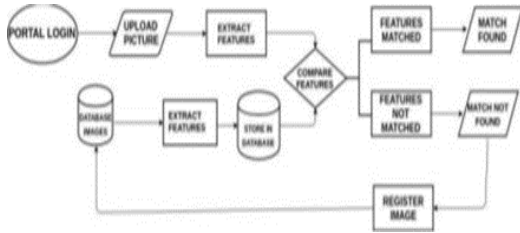

Fig. 1. Overall Structure of Proposed System

To prevail over the drawbacks of previous systems we are building a system which existing systems were not having. We got other concept regarding how the interface ought for adding new complaints or how to register the new case. Proposed System contains of following features

- Login and register the complaint.
- Fill the details such as name of missing person, location, age and then upload the image of missing person.
- Search the uploaded image with stored database, if found then give result as match found and if not then store as new entry.

A. Presentation Layer:

This is the front-end component, which is accountable for providing convenient or handy logic. User have to login here and register by filling the required information. User will interact with login page to register complaint and store the data to the database.

B. Business Layer

The business layer functions (web service) between presentation layer and database layer by sending the user's request to database. This layer will be responsible to fetch data from user, process it and then store it in database.

C. Database Layer

Database layer is responsible for storing the data in database. Also it responses to the queries which are fired by user. In Our project we have used PHP,HTML,MATLAB, MYSQL using XAMPP database for storing Information.
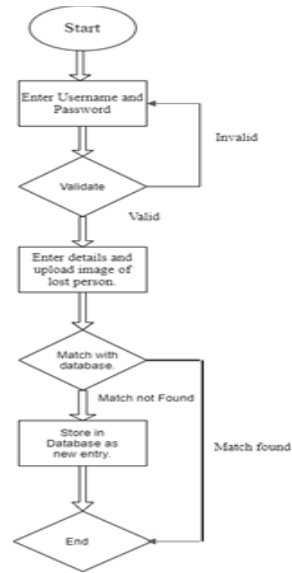

Fig. 2. Flow of System

V. METHODOLOGY

The proposed system, which we have designed, works on below methodology.

Here we are detecting the facial key points of lost person; dlib facial landmark produces about 68 unique points for a face. It uses a one-shot learning technique. Those produced points are float values with accuracy of about 8 points after the decimal. It is something like this —
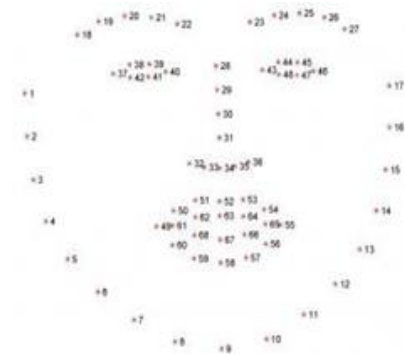

Fig.3. Facial Landmark

When the desktop application registers about three cases, dlib generates 136 * 3 facial landmark points. 136 is the count as x, y coordinate would be generated for each point, there are 68 points, and three is the number of cases. Then the classifier is trained based on these points. Suppose if KNN dispense the

facial landmark points in the plot where RED corresponds to Person 1, GREEN for Person 2 and BLUE for Person 3.
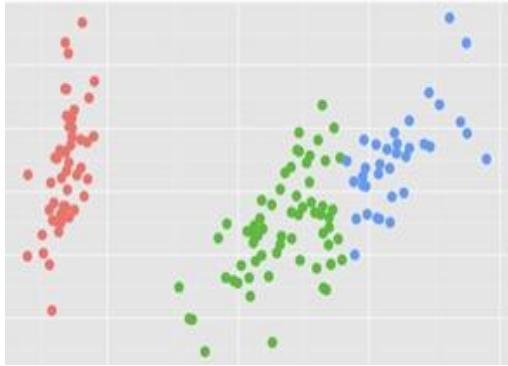

Fig. 4. Working of KNN Classifier

After this for matching any person's face, we need to simply produce facial landmarks of that person and we will then try to predict the confidence using the KNN classifier, which we trained, if the confidence goes above 60 then it is said that it is the same person.

Now, if a person is matched using the KNN model, we trained then as output, we will get the encoded label. This encoded label will contain information of that person.

VI. RESULTS

The person will login first using username and password.

Then, register the new case by uploading image then fill the details and then save it. After showing, it will display saved successfully.
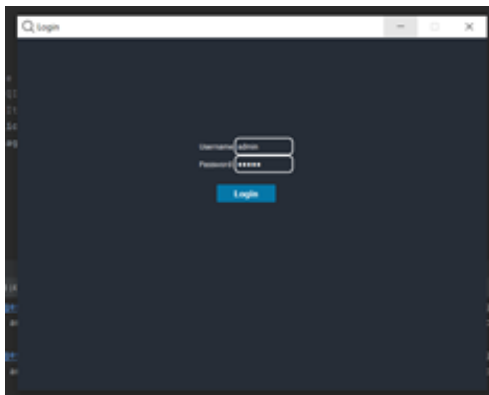

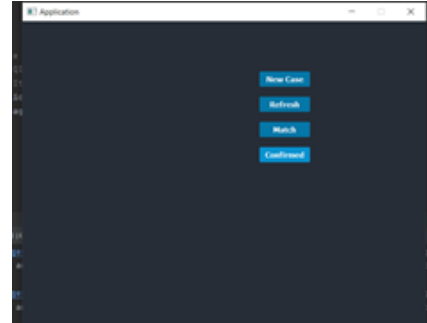
Fig.5. Login Window

Fig.6. Click on New Case

Fig.7. Fill the details and upload image
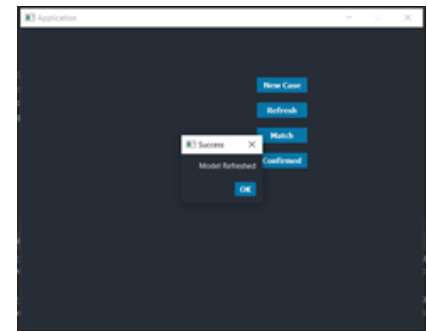

Fig.8. Save to database

Fig.9. Match found

Fig.10. Match found

VII. SOFTWARE REQUIREMENTS SPECIFICATIONS

A. Software Requirements

Operating System: Windows, Linux, Ubuntu

Programming language: Python

IDE: Any IDE (PyCharm, VSCode, Python IDLE)

Database: Postgresql

Anaconda Navigator (anaconda3)

B. Hardware Requirements

Processor: Intel 2.0Ghz Processor pentium 4

RAM: 4GB

Hard Disk: 512 GB

VIII. CONCLUSIONS

Moreover, the procedure of identifying the missing people is done quickly in this way. Our system put back the manual method of scrutinize the database of single picture to examine, by a well-planned face recognition method which does the work in no time.

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