Finding Missing Person Using AI

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Abstract - In the current times, locating a missing individual is an arduous task despite the prevalence of social media platforms. The process entails a considerable amount of paperwork and is time-consuming, yielding minimal chances of a successful outcome. In light of these challenges, our project aims to develop software that expedites the search system by utilizing facial recognition technology. The software is designed to aid both the police department and the public in their search efforts. When a person goes missing, their guardian can upload their picture to our database, where our facial recognition model will compare it to all images in the database. If a match is found, both the police and the person's guardian will receive a notification alerting them of the discovery.**Keywords** - KNN Classifier, Face Recognition, Dlib

1. INTRODUCTION

Every day, countless individuals around the world, including children, teenagers, those with mental challenges, and the elderly with Alzheimer's, go missing. Unfortunately, a significant number of these individuals remain unaccounted for. As a society, it is crucial that we address this issue. Therefore, this paper proposes a software that can aid the police and the general public in the search for missing persons by utilizing face recognition technology. Although facial recognition has many applications, finding missing persons is by far the most significant advantage of the technology. To simplify the process of locating missing persons, we intend to develop a software that can be accessed by a select group of volunteers. This software would enable us to locate a missing person in a short amount of time, thus making the police's job easier. To automate the process of recognizing a specific person by comparing their image to others and determining if they possess the same characteristics, there is a need for automation. This approach would enable us to determine if the person in the photo taken at a particular location is the missing individual. If the software detects a match, the police can then take the necessary steps to locate the person in the specified area. Our software will have a data storage feature that will save all missing person data so that the software can quickly detect and trace them.

2. RELATED WORK

After conducting extensive research, we have gathered the following findings from our literature survey. Firstly, a paper published by Pournami S. Chandran and his group of college students from the Centre for Development of Advanced Computing highlights the use of Deep Learning (CNN) and Support Vector Machines (SVM) for facial feature extraction. Secondly, in 2016, Rohit Satle and his team introduced a face recognition system that uses the Principal Component Analysis (PCA) method. Thirdly, Swarna Bai Arniker and her team proposed a missing people identification system using RFID Technology. Fourthly, Birari Hetal and his team utilized SWF-SIFT for face comparison, but SIFT's high computational requirements lead to significant time costs. In 2015, Thomas M. Omweri and Andrew M. Kahonge presented a system that employs mobile-based web services to find missing persons. In 2016, Professor Sumeet Pate and his team introduced the Line Edge Method (LEM) for face recognition to locate missing people. Lastly, in 2018, Peace Muyambo from Zimbabwe suggested a face recognition system that utilizes the Local Binary Patterns Histograms (LBPH) method to identify missing individuals in Zimbabwe.

3. METHODOLOGY

The system we have proposed operates through a unique methodology. It involves detecting key points on the face of a lost person through dlib face landmarking, which generates around 68 distinct points, each having a float value with an accuracy of up to 8 decimal points. With the help of this technique, the application can generate up to 136 * 3 facial landmarks after registering three instances, with 136 being the number of points and three being the number of cases. These landmarks are then used to train a classifier, such as KNN, which assigns a color to each person, for instance, RED for person 1, GREEN for person 2 and BLUE for person 3. When a new face is compared with these landmarks, the confidence score is predicted using the KNN model. If the confidence level is above 60, the person is identified. Once identified, the system assigns a coded label, which contains relevant information about the person.
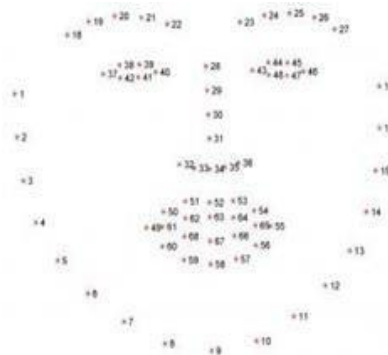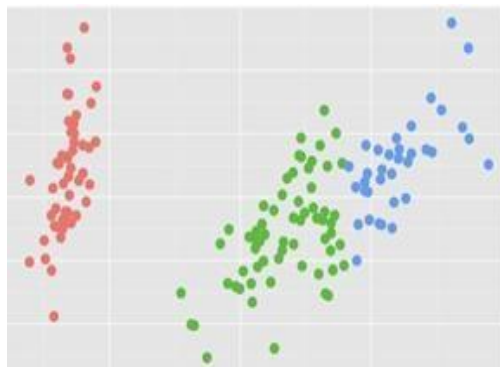

Fig.1. Facial Landmark

Fig.2. Working of KNN Classifier

4. RESULT

Initially, the individual is required to log in by entering their username and password. Once logged in, the user may proceed to sign up a new case by uploading an image, providing relevant information, and saving the details. Upon successful saving of the information, a confirmation message indicating successful saving is displayed.

Fig.3. Login Window
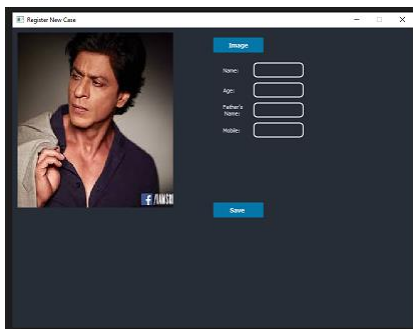

Fig.4. Click on New Case

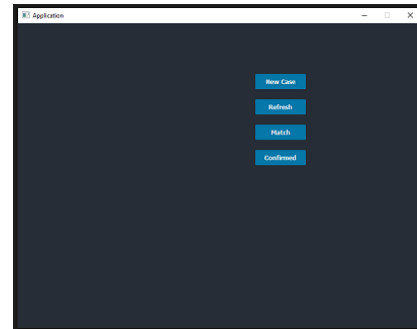Fig.5.Fill the details and upload image

Fig.6. Saved and matching

5. CONCLUSION

The technology of image recognition holds tremendous power in its ability to serve as a powerful tool when put to good use. It has the potential to significantly benefit a wide range of industries such as the hospitality and healthcare sectors. For instance, it can be used to quickly and accurately identify criminals and robbers, speeding up the process of identifying missing individuals. Our software solution aims to replace the time-consuming manual scanning method through databases with an efficient face recognition method that can identify matches within seconds. As part of our future plans, we are looking to expand the capabilities of our system by connecting it to public cameras, which will allow us to detect faces in real-time. Our system will continuously monitor the camera feed and immediately alert authorities if a lost person is detected in any of the frames, making the entire process quick and seamless.

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