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Vanished Individual Detector

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Abstract: *Every day in today's modern world, old ways are being replaced by new techniques to make complex job procedures easier and more efficient. This paper describes a method that can help cops and the general public find criminals, kidnappers, and missing people. It has a wide range of applications. Face recognition technology that has been developed will be able to recognise people in both photos and videos. This system's goal is to make searching easier by converting it from manual to machine work. When someone goes missing, family members or the police can upload a photo of the missing person to the database, which is then saved. When members of the public stumble across a suspect, they can photograph them and upload it to our website. Our system's face recognition model will use face encodings to try to find a match in the database. It is accomplished by comparing the face encodings of the uploaded image to the face encodings of the photos in the database. If a match is found, the police and anyone related to that person, as well as the location where the person was found, will be notified. Dlib will be utilised to detect and recognise faces in our system.*

Keywords: System, face recognition, face detection, face encodings, uploaded, dlib.

I. INTRODUCTION

A missing person faces a number of issues, despite the fact that only a small percentage of those who go missing are murdered, raped, or abused. The inability to determine whether a missing person is alive or dead causes anxiety and stress for the missing person's parents, friends, relatives, and guardians. The image of the person provided by the guardian at the time of disappearance is saved in our system's database. The public may share images of anyone who is in a dangerous situation. For this, an automatic match detection mechanism is used. Our system will be used to find a picture among the existing images in the database. This helps the police department find the missing person in any location. When a suspicious individual is discovered, a facial recognition model compares the photograph taken at the time to the photos submitted by the guardian/police department at the time the missing person went missing. If a match is found, an alert message with the individual's location will be sent to the police and guardian. If the image is not found, a new record in the database with the uploaded image will be created. As a result, the time required to locate a person's details is reduced. Our system will also be able to detect individuals from video captured by CCTV cameras, which will be extremely useful.

II. LITERATURE REVIEW

Nataliya Boyko, Oleg Basystiuk, and Nataliya Shakhovska published a paper in 2018 comparing OpenCV and Dlib performance. The challenges that were encountered while developing a face recognition system were also discussed. HOG inscription with a strong feature. The face landmark estimation algorithm (face orientation estimation) was used to solve the problem of positioning the large number of images. OpenCV detects all faces, whereas Dlib only detects those that are larger in size. As a result, they concluded that the OpenCV library is more suitable for face detection and has a higher yield. A system was proposed in 2019 by Muhammad Awais, Muhammad Javed Iqbal, Iftikhar Ahmad, Madini O Alassafi, Rayed Alghamdi, Mohammad Basheri, and Muhammad Waqas.The goal of real-time surveillance was to replace manual monitoring with machine monitoring. The instant identification and encounter of prohibited pursuit in the monitored area posed a critical challenge. The concept of real-time face recognition surveillance was proposed, and the entire operation was described. The model was built using high-resolution CCTV video data. The image was then compared to the reserved images in the database, and the withdrawn image was compared to the image already in the database; if the images did not match, a security wave was generated for additional security measures. For facial recognition, the histogram of oriented gradients (HOG) was used, and the feedforward backpropagation neural network classifier was used for appealing facial

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features. In the year 2020, Xiaofeng Han and Hao Yang proposed a Face Recognition Attendance System Based on Real-Time Video Processing. We were all aware that the fingerprint technique was used to track attendance, but its accuracy was poor. In contrast, both techniques assisted in removing all of the difficulties encountered; they had high accuracy, efficiency, and reliability. Following a brief explanation of real-time video processing face recognition, this technology has been divided into sections. For feature extraction for classification and identification, the LDA method was used, as was the SVM algorithm. This system was created with a number of popular programming languages, and OpenCV was used to inspect captured images. Shashank Reddy Boyapally published a foundation paper in 2021 with the primary goal of testing algorithms for biometric attendance systems. To extract features from images, the algorithms used histogram-oriented gradients, support vector machines to recognise faces, and deep convolutional networks to extract differences from images. This system's primary goal is to recognise the face in a video frame. The results will be unsatisfactory if any of the faces are not properly detected or if any other object is detected as a face. HOG (Histogram oriented gradient) could be used to solve this problem. Because this algorithm performs better when there are fewer faces, it is best suited for biometric and attendance systems. The procedures were also explained in detail. The steps were also thoroughly explained. They concluded that the HOG method is more effective.

III. Proposed Method

Algorithm Used:

We are using DCNN (Deep Convolutional Neural Network) to train and identify 128 unique numerical facial features. CNN has become the most widely used method for face recognition. The CNN model is used to improve the accuracy of face image classification. The training procedure is as follows:

- Step 1: Load the training face image of a missing person.
- Step 2- Insert another image of the same person.
- Step 3: Insert a picture of a different person.
- Step 4: Compare the faces
- Step 5: Result

Face Recognition is used in the proposed system to locate missing people. Figure 1 depicts the architecture of our framework.

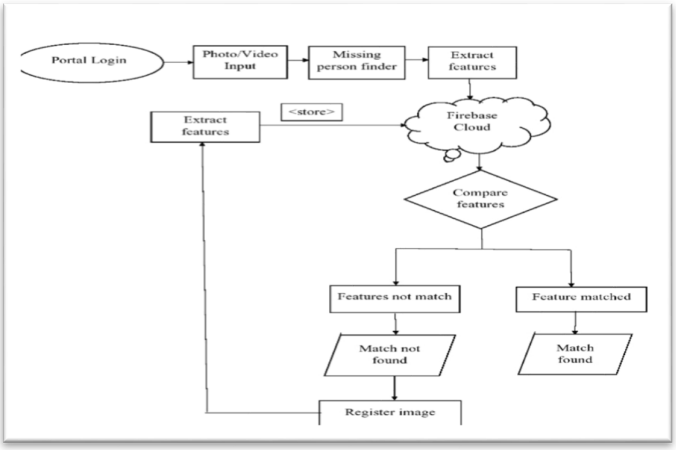

Figure 1: Architecture for Vanished Individual Detector

When a cop comes across a suspicious person on the road, he or she uploads a photo to the site. The facial encodings of the image are extracted and compared to the encodings of previously stored photos in the database. If a match is detected, the registered cop will get an alert message. If no match is discovered, the individual will be given the option of adding that face to our database as a new record with the location they gave. Our system will also be able to detect faces from CCTV videos and which will make the searching process very easy. For our project, we're going to use Dlib. The facial encodings of images uploaded by cops are retrieved and compared to the face encodings of photos maintained in the Firebase cloud.

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If the difference between the encoding of the uploaded image and the database image is less than or equal to the threshold, the face in both photos belongs to the same person. If so, the user will be notified that the match has been identified, as well as an image from the website that accompanies the posted image. If the gap between the text of the code is more than the limit, the faces of the images do not belong to the same person. Our suggested method will help identify missing people in this way. Figure 2 shows the administrator and police login.

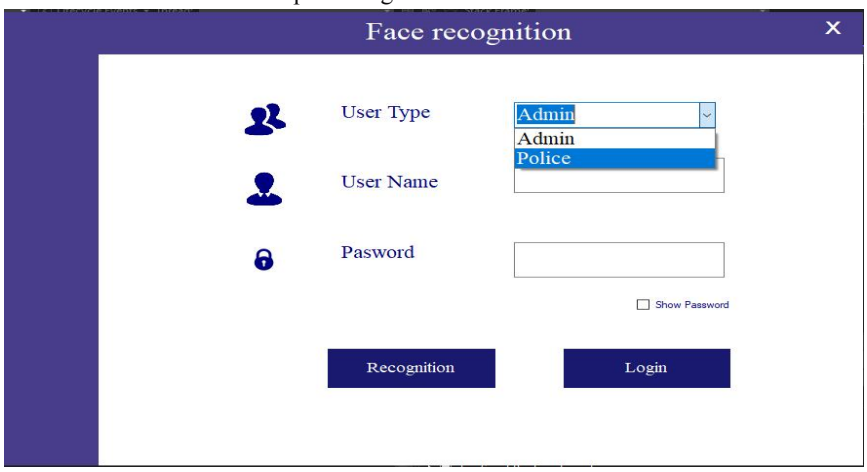

Figure 2: Login page

The system is built using C# and we are going to use Firebase cloud for real time database it is a cloud hosted database.Fig.3 shows the window where the trained images can be loaded, data can be synced where the camera can detect the person, the location can be manually entered and the window also shows the date and time.

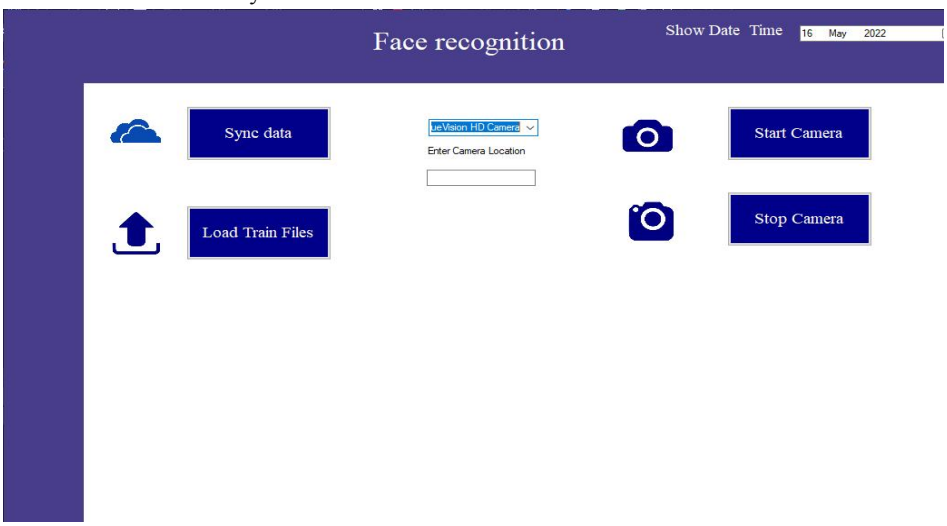

Figure 3: Window with various functions

Figure 4 depicts how the camera detects the person and how the trained image aids in recognising the person in front of the camera. The Firebase real-time database statistics are shown in Figure 5. The Firebase Realtime Database enables you to create complex, collaborative apps by providing secure access to the database directly from client-side code.

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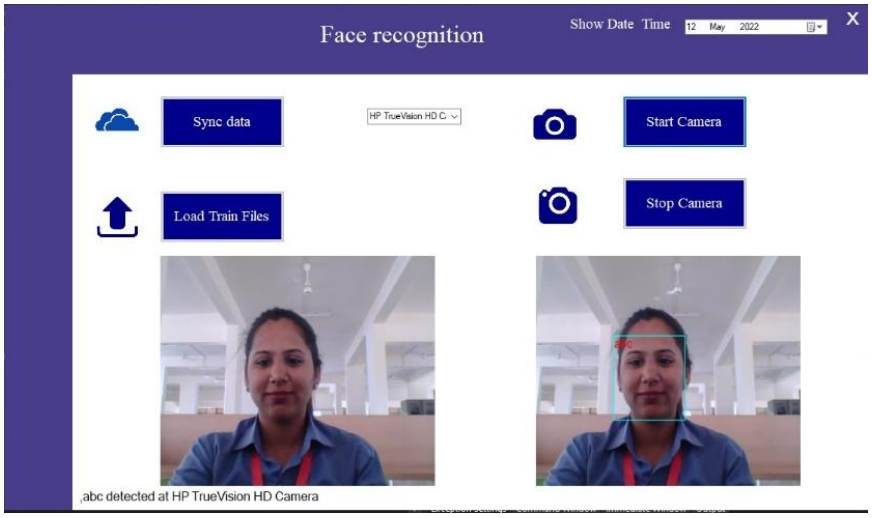

Figure 4: Face Recognition

Figure 5: Real time Database

IV. Conclusion and Future Scope

Our system replaces the inefficient human approach of searching through databases for each photo to confirm the match with an efficient facial recognition method that completes the job quickly. Face detection improves surveillance efforts and aids in the capture of criminals and terrorists. Personal security is also improved because there is nothing for hackers to steal or change, such as passwords. The technology is not just for tracking down criminals. For example, it could make it easier to locate missing children and seniors. Face recognition could make airport security checkpoints less intrusive for passengers. Applications include not only physical security, but also cybersecurity. Face recognition technology can be used by businesses to replace passwords when accessing computers. We intend to add new features in the future.

V. Acknowledgment

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References

[1]. Performance Evaluation and Comparison of Software for Face Recognition, based on Dlib and OpenCV Library 2018 (Nataliya Boyko, Oleg Basystiuk and Nataliya Shakhovska)

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[2]. The Excellent Properties of a Dense Grid-Based HOG Feature on Face Recognition Compared to Gabor and LBP 2018(Zheng Xiang, Hengliang Tan, And Wenling Ye)

[3]. Birari Hetal, "Android Based Application - Missing Person Finder", in Iconic Research and Engineering Journals,2018.

[4]. Efficient Face Recognition System for Identifying Lost People 2019(Bharath Darshan Balar, D S Kavya, Chandana M, Anush E, Vishwanath R Hulipalled)

[5]. Real-Time Surveillance Through Face Recognition Using HOG and Feedforward Neural Networks 2019. (Muhammad Awais , Muhammad Javed Iqbal, Iftikhar Ahmad, Madini O Alassafi, Rayed Alghamdi, Mohammad Basheri, and Muhammad Waqas)

[6]. Face Recognition Attendance System Based on Real-Time Video Processing 2020(Xiaofeng Han and Hao Yang)

[7]. Facial Recognition and Attendance System using dlib and face_recognition libraries 2021. (Shashank Reddy Boyapally)