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MISSING PEOPLE DETECTION SYSTEM

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Abstract - *In the world, an endless number of individuals are feeling the loss of consistently which incorporates kids, teenagers, old-matured individuals; and so, on the vast majority of them remain untraced. This framework will help individuals by speeding up the way toward looking through utilizing face acknowledgment. At the point when an individual disappears, individuals identified with that individual or the police can transfer the image of the individual which will get put away in the data set. At the point when the public experience a dubious individual, they can catch and transfer the image of that individual into our entryway. The face acknowledgment model in our framework will attempt to discover a match in the data set with the assistance of face encodings. It is performed by contrasting the face encodings of the transferred picture to the face encodings of the pictures in the data set. In the event that a match is discovered, it will be advised to individuals identified with that individual. Also, for the more precise outcome one from the public who tracked down the missing individual will attempt to acquire subtleties by asking more data and transfer it into our entry. The client will at that point check the data transferred that can help the affirmation and allegation of that missing individual.*

***Key Words*: Missing person, face recognition, Uploaded image, Confirmation, Insert, Notification.**

1. INTRODUCTION

A missing individual is regularly portrayed on the grounds that the person who is frequently a little child or a grown-up who is lost, intentionally or automatically. There are different classifications of missing instances of which just 43% of missing cases' reasons are known, 99% are adolescent runways, 2500 cases are on account of family issues and around 500 cases are seized by outsiders (which incorporate the both teenagers and grown-ups).[7]

The sociological space into which a little child disappears is very under-investigated in India. Expanding on all encompassing accounts arising out of optional sources and existing writing on Indian kids' weakness and giftedness, the article plans to check the scene of missing kids. The investigations recommend such an interconnected human science add to the marvel of missing youngsters — these kids are essentially from the less fortunate foundations, who are abducted, dealt, or tricked to a great extent for social, business, and sexual abuse.

This examination was led to comprehend a more profound comprehension into the matter of missing kids, so on influence the holes that require mediation. Ladies add about 52% of missing cases and guys 48%.[8] "In India, there are no spending plans designated to discovering missing individuals," guaranteed by a government official source. A missing individual appearances numerous snags, few are exposed to death (murder), assault or abusement.

People worried about their missing individual like guardians, companions, family members also gatekeepers are presented to pressure and stresses from not knowing whether the missing individual is alive or dead. In our framework, the picture of the individual given by the client at the hour of missing is put away in the data set. General society is offered position to transfer photos of any individual in unsure circumstances. Programmed recognition of match for this image among the generally existing pictures in the data set will be done through our framework. At the point when a dubious individual is found, the image at that case of time is contrasted and the pictures transferred by the watchman/police division at the hour of missing through the face acknowledgment model. On the off chance that a match is discovered, it will be informed to the client. If not tracked down, another record will be made in the data set with the transferred picture. By thusly, it diminishes the time taken to look for an individual's detail after he/she is found.

2. LITERATURE SURVEY

Deep Learning based Facial Feature Extraction and coordinating with SVM (Support Vector Machine) the photos of missing children are stored in the database. Faces are detected from those images and features are learned by a Convolutional Neural Network. These learned features were used to train a multi-class SVM classifier. They used this method to correctly identify and label the kid. The main difference between their work and ours is that, here once a lost person is found and if the person's face is not already existing in the database, the public themselves who found that person can register that face as a lost person with the situation they found him/her in our portal which wasn't proposed in their system. This will help the process of searching faster. And their system involves complex algorithms which make the process of extraction and classification slower. These are the main disadvantages of the previously existing systems. [1]

Face recognition system built by using Principal Component Analysis (PCA) method. The two main disadvantages of using the PCA method are that computational complexity is high and it can only process the faces that have similar facial expressions.[2]

LBPH method recognize faces. The proposed system had a face recognition rate of 70.5%. LBPH algorithm isn't sensitive to the variation of luminosity.[3]

SIFT is computationally heavy and therefore costs lots of time as it is based on Histogram of Gradients where each pixel in the patch needs to be computed.[4]

Line Edge Method (LEM) for face recognition to find missing people. The efficiency of the system was 85%.[5]

Missing person identification system using RFID Technology.[6] The disadvantage of this system is that the concerned person has to physically wear the RFID tag all the time which is infeasible.

3. PROPOSED SYSTEM

Our proposed framework utilizes Face Recognition for missing individuals' recognizable proof. Here the general public or police who finds a suspicious person (child, mentally challenged person, etc.) on the road uploads an image of that person into the portal. Our system extracts the face encodings of the image and compare with that of the face encodings of the previously existing images in the database. If a match is found, an alert message/notification will be sent to the user. If a match is not found, then the person will be provided with the option of registering that face as a new entry to our database. Whenever public upload a picture, the face encodings of the image are extracted then compared to the face encodings of the pictures stored within the database. The user is notified that a match is found alongside the image from the database that matched with the uploaded picture.

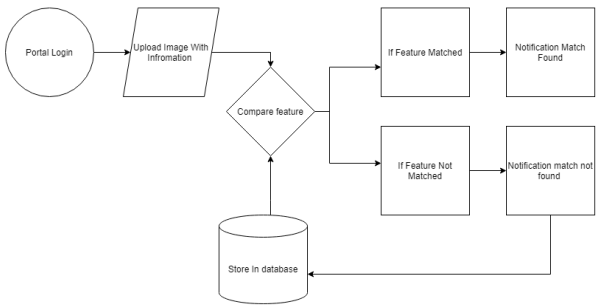

Figure 1. System Diagram

4. IMPLEMENTION DETAILS

Our framework is web application based. First, we built front end by using reactjs. Reactjs[9] is a component-based JavaScript library that helps in frontend development. We have used developed than 30 different components of reactjs. For user form validation, simple-react-validator [14] library has been used. For Routing, react-router-dom[15] has been used.

For back process we have used NodeJS [10] which gives the environment to run the backend code. We used face-api.js [13] for face recognition and then implemented fast2sms api. Now, for transferring information from frontend to backend, we used json and stored path in the image in mongo db. To send the image from frontend to backend, first we converted image binary and then sent it. User can upload images from both sections which are found report and found the child. Those images are saved in our database. For the database, we have used MongoDB. [11]. By the use of Express JS[12], we can enable multiple HTTP requests at a time.

We divided our framework into four modules i.e., Found, Missing, Gallery, Notification. Hence, it makes it easier for our user to operate it smoothly. By this way, our proposed system will help in identifying the missing people.

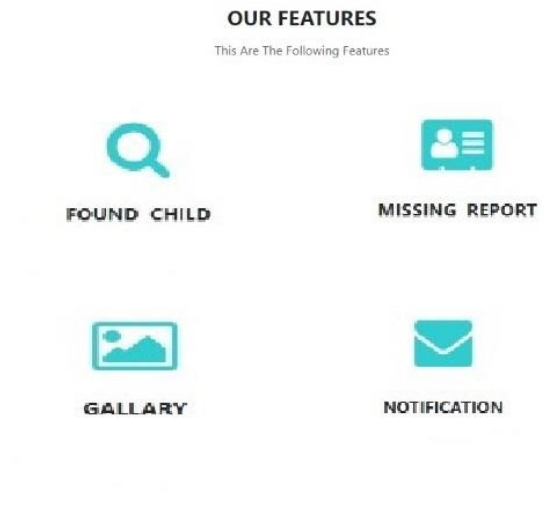

Figure 2. Project Features

Module 1: - Found Child

When anyone from public encounter a suspicious person, they can capture and upload the picture of that person into our portal with the needful details to be filled. If match not found, can create a new entry and it will be saved in the database.

Module 2: - Missing Report

When a person goes missing, the people related to that person (user) can upload missing persons image with the needful details to be filled. Our system will extract the

features and will try to find out a match from the existing images in a database.

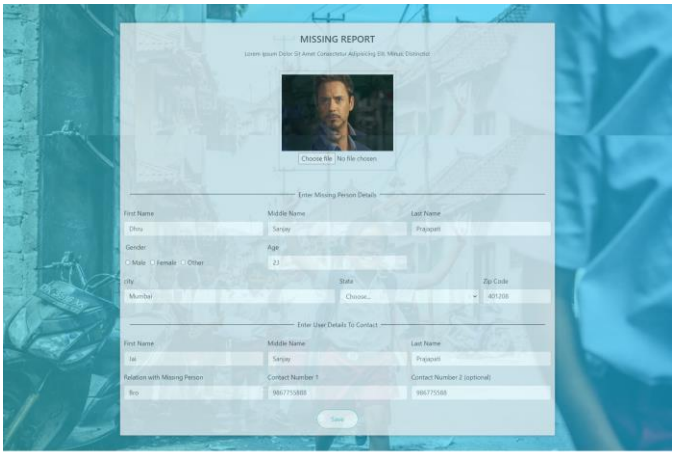

Figure 3. Missing Report Form

Module 3: - Gallery

Our gallery consists of stock of images of missing people that people have uploaded. Find the perfect missing people stock photos here. There are a wide number of images in gallery so to minimize the task we have added filters that makes your searching simple and easier. For example, finding the images of all missing boys or all missing girls. Also, if you want to find image of missing person by his/her name, that's too possible. You just need to enter the name of the person in the search bar and the results of that particular name from the gallery will be displayed on your screen. In Addition to this- when you click on any specific person's image, this will exhibit that person's details i.e., Name, includes brief physical description of the person and where they were last seen, Address, and who uploaded the photo.

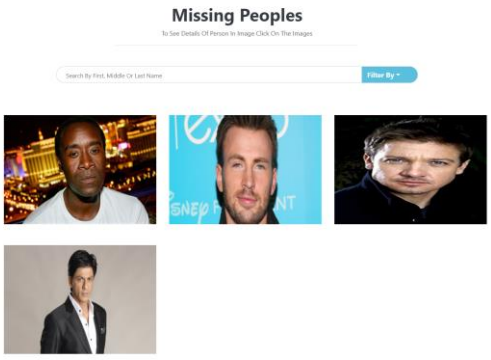

Figure 4. Image Gallery

Module 4: - Notification Page

When a match is found, the user will get a notification on his/her number. In notification, until the guardian or family members don't accept or approve whether if missing person belongs them, it won't expose any personal details related to him/her. Notification sections displays that the message has been sent to the user successfully.

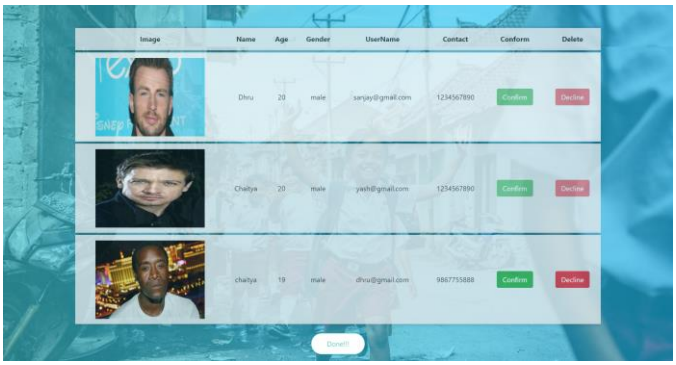

Figure 5. Notification

5. CONCLUSIONS

There are many previous methods that have implemented for face recognitions one of them are SVM algorithm which make the process of extraction and classification slower. Other one is the using RFID Technology. But the main drawback of this technology is that the user has to ware an RFID tag all the time.

The method of identifying the missing people is fastened. Our system replaces the manual method of scanning through the databases for every picture to see the match, by an efficient face recognition method which finishes the add no time. No need to ware a RFID tag all the time.

The testing conducted by us yielded an accuracy of 91.66% where the dataset included 72 images – 36 pairs which included images of kids, teens, adults (male and female) with age gap, different hairstyles, filters etc.

In the future, we are getting to extend this technique further by connecting our system to public cameras and detect faces real-time. The frames are going to be continuously sent by the general public cameras to our system where our system is going to be continually monitoring the frames. When a lost person is identified in any of the frames, it'll be notified to the concerned authorities.

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