MISSING PERSON IDENTIFICATION USING FACE RECOGNITION

Mr. E. Murali*1, S. Achyuth*2, V. Nithya Sree*3, B. Dilli Kavitha*4, R. Raj Kumar*5, M. Vedhardhi*6

*1Associate Professor, Department Of Computer Science And Engineering, Siddartha Institute Of Science And Technology, Puttur, India.

*2,3,4,5,6Students, Department Of Computer Science And Engineering, Siddartha Institute Of Science And Technology, Puttur, India.

ABSTRACT

In our society, A countless number of people are missing every day which includes kids, Teens, Girls, Mentally challenged, Old-aged people with Alzheimer’s etc. Even though missing cases are getting filed against them in police stations. It’s really getting impossible to find them in most of the cases. In existing way, If the person was found missing we have to file a complaint in the nearby police station of where he was lost. After filing the complaint, police will start the enquiry by taking required information. It is a time consuming process and need much efforts. so, we plan something named as “missing person identification using face recognition” which makes our task quiet simpler. We are going to design a web application where one can able to upload the missing person details and store it in database. If the person who is missing is identified on CCTV this system can able to detect him using face recognition algorithms. Whenever the system confirms the matching, then it will set up custom alerts along with location and send them directly to family members and concerned investigative officers. Along with that if a person or a police finds a suspicious person on the road, they can upload a picture of that person into database. The Histogram Of Oriented Gradients (HOG) algorithm in this system will encode the frame and find the faces present in every individual frame and Support Vector Machine (SVM) will compare it with the previously existing images in our database. If there was a match it will send the alert. 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 with the location they found.

Keywords: Face Recognition, HOG, SVM.

I. INTRODUCTION

In our society, a countless number of people are missing every day which includes kids, Teens, Girls, Mentally challenged, Old-aged people with Alzheimer’s etc. As the number of missing complaints in the present society are getting increased the responsibility of searching them on police becoming quite challenging. Even though missing cases are getting filed against them in police stations. It is complicated to trace them through investigation as it requires lot of efforts and time. Even though cc footages are available sometimes, it takes lot of effort to go through each and every recorded video present in the database. It is time taking and hectic work. This made us to plan something named “missing person identification using face recognition”, which makes our task quiet simpler. The main intention of the this project "Missing person identification" is to locate the missing person using live CCTV footages through their face recognition and to give alert to the police station along with the location in the form of SMS.

It also allows normal people to upload the pictures of any suspicious persons who they come across. If the complaint is already filed against the same person in the portal it will show an alert to the police.

II. LITERATURE SURVEY

Every year approximately 100000 peoples gets lost in India. In some cases lost person gets found easily, but in some critical cases missing persons are never reunited with their relatives. Finding lost person can be a difficult task to the family members as well as to the police. The currently available Manual System for finding missing person has very long procedure and takes more time. More time is require for launching an FIR (First Information Report) in the police station. Also time required for finding lost person is more. So in order to improve the efficiency and accuracy of finding the missing people face recognition has became the key now a days. Some of the previous works which include face recognition techniques for identifying the missing persons are as follows:
IDENTIFICATION OF MISSING PERSON IN THE CROWD USING PRETRAINED NEURAL NETWORK (Issued on: 02 | Feb 2020): The aim of this project is to identify the person who is missing in the crowded area using the drone which is having the camera and by this the person who is missed in the crowd will be easily identified within a minute. They have used Convolutional Neural Network (CNN) for the identification of missing person.

CRIMINALS AND MISSING CHILDREN IDENTIFICATION USING FACE RECOGNITION AND WEB SCRAPING (Issued on: 2020): In this proposed system criminals and missing children can be identified by the face recognition from an image or video frame which is captured by the cameras which are installed in various locations and compare them with images available in existing dataset. If the match is found for the input face, then the details associated with the related image will be displayed. Here they have used Haar cascade classifiers for the identification of missing children and criminals.

ANDROID BASED APPLICATION–MISSING PERSON FINDER (Issued on: 2018): The proposed system starts with two options 1) User registration tab and 2) User login tab. As the user is logged in the app will show two options 1) missing persons and 2) found persons. Then system will compare with uploaded missing person photo with the previously existing image. If match is found, then system gives alert message. Here SWF-SIFT algorithm is used for comparing two images.

MISSING CHILD IDENTIFICATION USING FACE RECOGNITION (Issued on: 2017): In this proposed system one can able to upload the missing person details and photo in database. If a person or a police finds a suspicious person on the road, they can upload a picture of that person into database. Then system will encode the photo and compare it with the previously existing images in database whenever the system confirms the matching, then it will send alert message. Here PRINCIPLE COMPONENT ANALYSIS (PCA) is employed for the identification of person.

EFFICIENT FACE RECOGNITION SYSTEM FOR IDENTIFYING LOST PEOPLE (Issued on: May 2019): When a person goes missing, police can upload the picture of the person which will get stored in the database. When the public encounter a suspicious person, they can capture and upload the picture that person into our portal. The face recognition model in our system will try to find a match in the database with the help of face encodings. If a match is found, it will be notified to the police and the people related to that person along with the location of where the person is found. Here SVM is employed for identification of person.

III. PROPOSED SYSTEM

We are going to design a web application where one can able to upload the missing person details and photo in our database. The system that we are going to design can able to access multiple CCTV footages (which are generally public cameras in this case) on the instance. The live video footage will be continuously sent to this system and it is going to be continuously monitoring the frames present in received footage. If the person who is existing in the database as a missing one is found on the CCTV footage in any one of the frame then this system which is incorporated with the face recognition algorithm i.e Histogram Of Oriented Gradients (HOG) can able to find him and when it confirms the matching through Enhanced video Analytics technique and then alert message will be sent to respective investigative officers and family members of missing person who was found along with the found location.

We are extending this technique further by giving access to normal public as users to upload pics of any suspicious person they come across. If a person or a police finds a suspicious person on the road, they going to an upload a picture of that person into our database. Then the Histogram Of Oriented Gradients (HOG) algorithm in the system can able to detect the face of the individual and SVM model compare it with the previously existing images. If the person was found in our database of missing complaints then an alert will be shown to the user as well as to the policemen and their family members.
This block diagram mainly considered of four major components of our "Missing person identification system". They are Admin, Data base Opencv, User. Here the admin can able to raise the complaints against the missing person by providing necessary information of the lost person like photo and personal info after getting logged into the system. The admin can also able to update or modify and delete the complaints if wanted as per the requirement. All the information regarding complaints raised by admin is stored in the database. The database also stores the login credentials of admin and it also stores pics inserted by users of any suspicious persons they came across. When the admin click on the button "start search" the system will start accessing CCTV footages with the help of Opencv library present in python. This opencv library coordinated with HOG algorithm is responsible for recognizing faces of the missing people whose data is present in the database from the ongoing video footages.

This system that we have developed can also give access to normal users i.e public to upload pictures of suspicious persons like mentally challenged persons, homeless kids etc, they came across. They also asked to share their personal info like phone number while adding pics of suspected persons for the future use. This personal info of user will also be stored in our database. When a complaint is already existing against that suspected person in our database then match will be shown to the user and alert messages will be sent to police men and family members of that suspicious person.

we are developing our project in terms of Three modules which are named as

- Admin module
- User module
- Searching module

**ADMIN MODULE:**

This module allows admin to get logged into the system. He can able to raise missing complaints and store the missing person details into the data base. He can view the records of missing people and delete those records if the person was found. He can also start accessing CCTV footages on button click.
USER MODULE:
This module allows users to create their account and upload pictures of any suspicious person they come across. They will be contacted when there is a complaint raised against that suspicious person they uploaded by any family member of a missing person.

SEARCHING MODULE:
This module helps admin to access CCTV footages on live and by using face recognition techniques, if it encounters a person who has a missing complaint against him in our database, it will send an alert to the respective investigative officer and their family members. As mentioned, this system allows users to upload suspicious person images. This image can be compared with all the other pictures present in our database. When any face match is found, this module gives an alert to the user, family, as well as to the police man.

ADVANTAGES OF PROPOSED SYSTEM
- This software will help the police to track the missing person without any special efforts.
- Due to direct access for the software to the CCTV footages there will be no need of manual searching of the missed one.
- Alerts and location will be sent directly to the respective contacts, it will help in finding the missing one without wasting time at that instance itself.
- Since CCTV are arranged everywhere we can achieve the solution by using them itself without any additional investigation.

IV. EXPERIMENTAL RESULTS

Execution procedure:
1. If a person or a police finds a suspicious person on the road, they can upload a picture of that person into our database.
2. Then our system will encode the photo and compare it with the previously existing images in our database.
3. Whenever the system confirms the matching, then it will send an alert mail along with location to family members and concerned investigative officers.
4. We are extending this technique further by accessing public cameras. The live video footage will be continuously sent to this system and it is going to be continuously monitoring the frames present in received footage. When a lost person is identified in any of the frames, it gives an alert to the respective investigative officers.

List Of Screenshots:
Login Page:

![Login Page Image]

Figure 2: Login page where the user and Admin uses to login

Description: The above figure shows the login page where the Admin and users can login to their accounts if they are registered.
User Dashboard Page:

**Figure 3:** User page where the user can add missing complaints.

**Description:** The above figure shows the complaint form where all user can add complaint through this form by adding their missing person details like name, email ID, phone number and image.

Admin Dashboard:

**Figure 4:** Dashboard for Admin

**Description:** The above figure shows the admin dash board where the admin can add missing complaints and can start searching for missing person and He can delete the complaint if the missed person is found. Then Admin can logs out here by clicking the log out button.

V. CONCLUSION

The proposed work helps in identification of a missing person in suspected area using face recognition. As recognising missed person among set of persons present in the given video that we have accessed from public cameras is a quite challenging task, we are using HOG (Histogram of oriented gradients) for better accuracy and efficiency. This system that we are designing can able to access CCTV footages on live and If the missing person found in the CCTV Video streaming, then it tracks the location of missing person by using the location of camera where the person is detected and it send the location coordinates to higher authorities.

In this project we are also enabling the access to the normal users to upload images of suspicious persons they came across. If a missing complaint is raised against the same person, through face recognition techniques this system will confirms the matching and sends an alert to police. Thus this proposed project will reduce the efforts of police men in searching missing people and will make searching process smoother and effective.

VI. REFERENCES


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