



Misplaced Person Recognition and Detection System by using OPENCV Python

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importance to have an accurate prediction in every extreme scenario's.

Focusing on face recognition technique, it is a way of identifying the person's identity using their face. This recognition or detection of face is implemented by using the photos, real time videos, clips and live camera footage of that person. Face detection is a phase where identifying the faces from the images or video sources. It very well may be utilized for remote distinguishing proof administrations for security in regions, for example, banking, transportation, law requirement, and electrical businesses.

The main objective of this research paper is to use a very simple and effective technique that can easily identify and detect the person's face with their information that already stored in the system database. This could be possible with the help of Python. In Python, there are several libraries that are available for image processing such as Open CV, sci- kit-image, PIL. For our purposes, we have used Open CV.

In modern days, such techniques aids in various task such as crowded areas, or public places as well as in private places and in investigation process to find criminals , missing person and suspicious person . It is widely used (in public screenings) to detect people who are being captured in public video surveillance.

The face database is gathered to recognize the faces of the misplaced person. The system trains the faces in the database known as the person's database. This system uses user friendly interface to maximize the user experience while both the training and testing of images and identify the person. Face identification

1. Abstract

This paper is mainly focused on to the recognizing the person and detecting the person who was lost or misplaced. For recognition and detection we are using the computer vision and image processing that is Open CV and python which is the part of deep learning. For identification of the person the main part for recognize is human's face[3]. Also Haar classifier algorithm and LBPHF is also used in these system. Once the person is detected and recognize then the system shows the complete information of that person which is already stored in the database of the system. This system is use to detect the misplaced person, for security reason, in school/college, also to identify the criminals, etc. This system is used in various sectors and it is very efficient and simple to use the system.

Keywords: Open CV, Face detection, Face Recognition, HAAR cascade classifier, LBPH face recognizer.

2. Introduction

In the past few decades recognition and identification of people to accurately authenticate has increasingly gained importance in a variety of places like, airports and other government-based locations. They use various techniques from Fingerprinting and Iris scanning systems, to voice and face recognition systems to authenticate people. So is the growing

uses to separate the faces from non-faces. This module is used for various applications where face acknowledgement can be used for validation. In this system, recognizing the faces of the people can be given using face recognition which recognizes and detect the faces of the each and every people which information is stored in database of the system.

3. Literature Survey

1. a literature review on “Overview and an Approach to Real Time Face Detection and Recognition” Department of Computer Science Engineering, PRMCEAM, Badnera-Amravati, India and Department of Electrical Engineering, PRMCEAM, Badnera-Amravati, India . Anagha P. Dhote , Vikramsingh R. Parihar (2017) has studied the facial features detection and face tracking algorithms KLT and Camshift. They used Viola Jones algorithm for Face detection before invoking face tracking algorithms KLT and Camshift.

2. a literature review on ” Face Detection and Recognition using OpenCV and Python”, Department of Computer Engineering, Dr. Babasaheb Ambedkar Technological University Raigad, India. Tejashree Dhawle, Urvashi Ukey, Rakshanda Choudante (2020) has studied the system of face recognition in camera of computer using the opencv library in python.

3. a literature review on “Facial Recognition using Open-CV” Senior Systems Software Engineer Mobile Computer Vision Team, NVIDIA AUSTRALIA and Department of Economic Informatics and Cybernetics Bucharest University of Economic Studies ROMANIA. Shervin EMAMI , Valentin Petruș SUCIU (2015) has studied the system that provide an easier human-machine interaction routine when user authentication is needed through face detection and recognition. With the aid of a regular web camera, a machine is able to detect and recognize a person’s face; a custom login screen with the ability to filter user access based on the users’ facial features will be developed.Also they develop a set of detection algorithms that can be later packaged in an easily portable framework amongst the different processor architectures we see in machines (computers) today.

4. a literature review on “Facial Recognition using the Open CV Libraries of Python for the Pictures of Human Faces Wearing Face Masks during the COVID-19 Pandemic” Amity University Dubai (2021) has studied the system that o detect and recognize faces of people with mask with the help of Python

Image Library. They develop a web based system that can detect the face when wearing a mask on face using the algorithm.

According to this research papers there are various algorithms used to face recognition and detection method. Open-CV is the best library that can easy and simple to use for face recognition techniques. In our system we used the open-CV in the most advanced programming language that is python.

3. Implementation

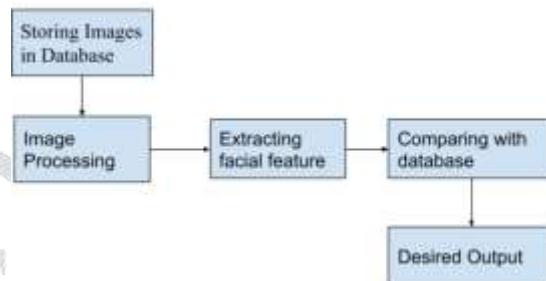


Fig.1 Block Diagram of System

Figure 1 shows the block diagram of the proposed system. The system is a software based web application followed by some trending technologies like python, open CV and deep learning. This trending technology has played a vital role in the project. This system is based on computer technology that gives service to the users.

As the diagram suggests, a User Interface (UI) is first opened up and an "ID Name" is entered, this is a unique string that is different for everyone using the GUI. Once the ID Name is entered, a photo of the person is taken by the system. This photo is then used to train the image, to identify the person. Once the training is done, the image is stored as a data set and the person is detected.

The first half of the system showcases the training portion of the process, i.e. taking pictures of people and training the images of the system to identify them. The image of each individual is taken in multiple angles and lighting conditions to increase the accuracy of the system in the identification process[8].

The second half of the system diagram showcases the detection portion of the process. The image in system, once trained and has the images stored as datasets, is ready to identify the person in front of it. It scans the person's face and matches it with the datasets. If it detects a match with the dataset, then it performs the

desired operation which in our case is to detect and recognize the missing person and showing his ID that already stored in system database.

Face is the main part of our body to identify the person. Every face has at least 80 distinguishable parts called Nodal points. Few of them are:

- Distance between the eyes
- Width of the nose
- Depth of the eye sockets
- Structure of cheek bone

A general face recognition conducts a comparison of these parameters with the images in the database. We use this information to extract the face from the image and save it. We first take the photo from the camera and create a face detector object. Once that is done, the captured images are converted into grayscale and are sent to the image detector. From the detector, we get the position, width, and height of the face. Once we get these values, we compare it with the data base present in the system[8].

4. Methodology

a. Home Page



- Here in this page you will find four function button i.e Start Search, Register Person, View Data & Exit.
- Here You will be asked to enter the details of person whom you want to search for and then a new window will pop up.

b. Registering Person Page



- **Register Person :** First Step is to Register a Person, enter the details of the person and save the data.

c. Person Detection



- **Start Searching :** Once person registration is completed, now its time to click on start searching button to activate the detection window to find a misplaced person.
- In the Detection Window we can see in the above screenshot person name and id can be seen on the face.

5. CONCLUSION

Misplaced person recognition System has been visualize to reduce the errors that occur in the manual authenticating and identifying systems. The aim is to automate and make a system that is useful to an organization. This method is secure enough, reliable and available for use. There is no need of specialized hardware for installing the system in the office or any other locality. It can be designed by using a camera and a computer. Once set up, it can be used for various

purposes ranging from marking the person's identity to identifying criminals all that needs to be done is the system be trained properly.

The misplaced person recognition and detection system is the advanced technology that can identify the person while the process of detection and show the id of the person which are stored in the database . It is used for finding the misplaced person , identifying criminals, identifying unknown person, etc all that need to be complete that our system is trained and add the data properly.

This system is used in the unlock the phone , identifying people on social media platforms, aid forensic investigation, protect law enforcement, etc.

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