Detection of Missing Persons by using Artificial Intelligence

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Abstract: *Face recognition is a biometric-based technology that mathematically maps a particular person's or individual's facial features and stores all that data as a face print. By using this technique, the information of the face of a person is saved mathematically or in the format of graphs in the database, which is used for detecting that particular face. Face recognition model in our system will find a match of that person in the database. If a match is found, it will be notified to the police and the guardian of that person. In this paper we will use the ideas of the Tensor Flow which is based on Machine Learning (ML) and will detect faces with the maximum accuracies to find the missing person.*

Keywords: Artificial Intelligence

I. INTRODUCTION

In the world, a countless number of people are missing every day which includes kids, teens, mentally challenged, old-aged people with Alzheimer's, etc. Most of them remain untraced. This paper proposes a system that would help the police and the public by accelerating the process of searching using face recognition. Face recognition technique can be used for many things and finding the missing person is a biggest advantage for any face recognition technique. To make the task of finding the missing person easier we are planning to make an application which will be accessed by some volunteers through which we can find missing person in short span of time. This will make the work of police to find a particular person easier. Using Tensor Flow to build face recognition and detection models might require effort, but it is worth it in the end. As mentioned, Tensor Flow is the most used Deep Learning framework and it has pre-trained models that easily help with image classification. The images are classified using CNN. In most cases, to generate a model means the classification of the images only needs to provide a similar image which is the positive image. The image is then trained and retrained through a process known as anchoring or Transfer Learning

II. LITERATURE SURVEY

We did lot of survey and summed up following regarding literature survey so firstly, S. AYYAPPAN and his fellow mates from IFET College of Engineering have a presented a paper which deals with a similar problem statement and objective. The system proposed by them makes use of Deep Learning based Facial Feature Extraction and matching with stacked convolutional auto encoder (SCAE). The images of missing Persons are stored in a database. Faces are detected from those images, and a Convolutional Neural Network learns features. These learned features were utilized for training a multi-class SVM classifier. They used this method to identify and label the kid correctly. The main difference between their work and ours is that we are going to create a dataset of lost persons with the help of people who want to contribute to society (voluntary work). And their system involves complex algorithms which make the process of extraction and classification slower [1]. Previously, Shefali Patil and his fellow mates from SNDT Women's University, Juhu, Mumbai have a presented a paper which deals with a similar problem statement and objective. The system proposed by them uses KNN Algorithm which makes use of 136 * 3 data points to recognize Face. The main disadvantage of using the KNN method is its accuracy 71.28%. The main difference between their work and ours is that here we are going to create a dataset using a mobile application with voluntary work of people. we are going to use Tensor Flow with trained model for face recognition. Also, our dataset is going to be stored in the cloud database

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III. METHDOLOGY

Python Programming Language - Python is the programming language used for this work. It is a free open source programming language. It is a High level programming language. It supports object oriented and structured programming fully. Python is Compatible with Major Platforms and Systems. It supports many operating systems. 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.CCN- are essential tools for deep learning methods.it is more appopriate for working with image data

IV. PROPOSED SYSTEM

Overall Structure of Proposed System to prevail over the drawbacks of previous systems. In which you can add the case easily and detect the face on your fingertips and get the result if the match found. You will get exact location of the matched person with volunteers contact details. The face recognition model in our system will try to find a match in the database with the help of Tensor Flow. It is performed by comparing the face encodings of the uploaded image to the face encodings of the images in the database. If a match is found, it will redirect user to that person's profile where location and volunteer mobile no is mentioned to contact.

V. OBJECTIVE

The objective of this project is to help Police and higher authorities to track down missing people quickly. The usual process to track a person is using investigation which requires time and experience (to ask right questions) Most of the time, investigation method works pretty well but it is time consuming and can be unsuccessful if the person (missing) has been shifted/moved to different location (city/country).In such cases, the ideal approach is to go through CCTV footages and evidences.Again, this can be very time consuming and given the number of people that go missing everyday, it can be a challanage to keep up with it.

VI. FLOWCHART
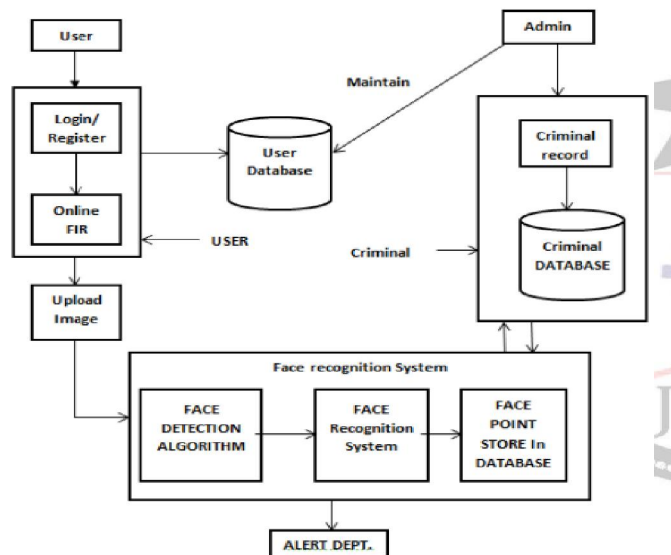
VII. PROBLEM STATEMENT

The objective of this project is to develop a system that can detect missing persons by analyzing camera or video feeds using OpenCV. The system will utilize object detection and tracking algorithms to identify human bodies in the frame, and then use face recognition techniques to match the detected individuals with a database of missing persons.

The system should be able to handle real-world scenarios with varying lighting conditions, camera angles, and other environmental factors that may affect image quality. It should be able to track the detected individuals across multiple frames to predict their future location and generate alerts when a match is found in the missing person's database.

The system should be user-friendly and provide easy-to-understand visual feedback to the user. It should also be scalable and capable of handling multiple video feeds simultaneously, allowing for widespread adoption in public areas like airports, train stations, and shopping malls.

The successful implementation of this project will provide a valuable tool for law enforcement agencies, search and rescue teams, and concerned individuals looking to locate missing persons quickly and efficiently

VIII. CONCLUSION

A missing person detection system using OpenCV can be an effective tool for locating missing persons quickly and efficiently. The system utilizes computer vision algorithms such as object detection, tracking, and face recognition to analyze camera or video feeds in real-time and detect human bodies in the frame. Once a human body is detected, the system tracks its movement over multiple frames and matches it with a database of missing persons using face recognition techniques.

The system generates alerts when a match is found, notifying law enforcement agencies, search and rescue teams, and concerned individuals of the detected person's location. The system also displays the detected human body and the matching missing person's photo on a screen, providing easy-to-understand visual feedback to the user.

The system can be designed to handle multiple video feeds simultaneously and can be scaled to handle large volumes of data. It can be used in various public locations such as airports, train stations, and other public areas to aid in the search for missing persons.

Overall, a missing person detection system using OpenCV can be a valuable tool for saving lives and reuniting families. With its accuracy, reliability, and scalability, the system can be an asset to law enforcement agencies, search and rescue teams, and concerned individuals in the fight against missing persons.

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