



DATABASE MANAGEMENT FOR FACIAL RECOGNITION SYSTEM

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ABSTRACT

The face is one of the easiest ways to differentiate the individual identity of each other. Face recognition is a personal identification system that uses personal characteristics or facial features of a person to identify the person's identity. The most used human face recognition process is face detection, where this procedure takes place very quickly in humans, except under certain conditions where the object is located at close distance. The purpose of this project is to develop face recognition based automated student attendance system. In order to achieve high quality performance, the test images and training images of this proposed approach are limited to frontal and upright facial images that consist of a single face only. The test images and training images have to be captured by using the same device to ensure no quality difference. In addition, the students have to register in the database to be recognized. The enrolment can be done on the spot through the user-friendly interface.



INTRODUCTION

The enhancement of science and technology leads to make the life more comfortable than older days. The emerging technologies like neutrosophic shortest path [1,2,3,4,5], transportation problem [6,7,8], uncertainty problem [9,10,11,12,13,14], fuzzy shortest path [15,16,17,18,19], PowerShell [20], wireless sensor network [21,22,23,24,25,26,27,28], computer language [29,30], neural network [31], routing [32] making the products more intelligent and self-healing based. The smart city applications like smart water, smart grid, smart parking, smart resource management, etc. are based on IoT and IoE [33,34, 35, 36] technologies. We have the development available to us to enable the organization of our consistently lives and the sharing of significant information with our associates, families and others. Why development is huge in our consistently life. It is a basic contraption that we can't avoid, it has a huge impact in the vast majority of our lives. Technology fundamentally handles the instruments, advancements and strategies used to help us with dealing with issues and simply improve our everyday schedules and easier to encounter to a great extent [37,38]. Advancement is inevitable in our normal everyday presences [39]. This is in light of the fact that presence without advancement is senseless in the present incredible world. Development, which joins instruments to propel unforeseen development, use and information exchange, has as its basic objective of making tasks easier and the handling of various issues of mankind. Right when development advances and makes our continues with extensively more worthwhile, we should pressure that it is so useful to our lives.

Face recognition is the process of identifying an already detected object as a known or unknown face. Face recognition technology is gradually evolving to a global biometric technique since it requires zero effort from the user end while compared with other biometric methods. In spite of the fact that other techniques of identification such as fingerprints, or iris scanning can be more accurate, face recognition has always remains

a major focus of research because of its non-invasive nature and because it is people's basic method of person identification. The purpose of this project is to develop the process of face recognition based automated student attendance system. Commonly, student's attendances are taken manually by using attendance register given by the faculty members in class, which is a time consuming event. Moreover, it is very difficult to check one by one student in a large classroom environment with distributed branches whether the authenticated students are actually responding or not. So, why not make it automated quickly and much efficient.

DIGITAL IMAGE IN DATABASE

Face recognition basically requires a database to store a number of pictures. Human face recognition is based on face detection because in order to identify a person's in a picture, face recognition method has to locate the people's face in the picture. Human face recognition compares the similarity between the captured pictures of the student with the pictures of the student within the database and finds the most similar students. It is processed by capturing the video of the students, convert it into frames, and relate it with the database to ensure their presence or absence, mark attendance to the particular student to maintain the records.

There are three major steps:

1. To find a good database of faces with multiple images for each individual.
2. To detect faces in the database images and use them to train the face recognizer.
3. Test the face recognizer to recognize faces it was trained for.

To perform the process of face detection, there must be a database which consists of student images in gif format. There will be 11 images for each individual. In each image, each individual student has a different facial expression like happy, sad, normal, surprised, sleepy etc.

**Fig.1 Samples of image**

We will use database by using to store different number of images of the total images of each individual student in training our face recognizer and the single image of each student individual to test our face recognition algorithm.

They are different types of image processing

1. Low level
2. Medium level
3. High level

Low level processing means performing main operations on images such as Scanning an image resize, rotate image, RGB to gray level conversion etc, The output of an image obtained after low level processing is fresh image. Medium level processing means extracting regions of interest from output of low level processed image. It deals with identification of edges. This process is also called as segmentation. High level processing deals with adding of artificial intelligence to medium level processed signal.

ELEMENTS OF DIGITAL IMAGE PROCESSING

The basic operations performed in a digital image processing are:

- Acquisition
- Storage
- Processing
- Communication
- Display

CONCLUSION

The aim of this Project is to capture the video of the students, convert it into frames, relate it with the database to ensure their presence or absence, mark attendance to the particular student to maintain the record.

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