A FACE DETECTION AND RECOGNITION SYSTEM USED FOR ACCESS CONTROL

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Abstract

In this project we develop a face detection and recognition system which is used for access control. The face detection system will accurately determine the locations and sizes of all possible human faces. The faces are then scaled to a recognizable size and passed to a face recognition system.

INTRODUCTION

In this project a face detection and recognition system is implemented and integrated into an Access Control system. Face detection is the first step for Face localization, Face Tracking and Face Recognition. The difficulty resides in the face that faces are non-rigid objects. Face appearance may vary between two photographs of the same person depending on the lighting conditions or pose.

Purpose

The aim of this system is to identify or verify a person by comparing and analyzing patterns based on the person's facial contours. Facial recognition is mostly used for security purposes. Facial recognition techniques are quickly evolving with new approaches such as 3-D modeling, helping to overcome issues with existing techniques.

Scope

Passport and visa verification can also be done using face recognition technology. A possible future application for facial recognition systems lies in retailing. In all government and private offices this system can be deployed for identification, verification and attendance.

SPECIFIC REQUIREMENTS

**Requirement Specification**

The CCTV camera provide us the footage which needs continuous monitoring.

That is time consuming.

Recognizing threat in the bunch footage is difficult task. It is beneficial for the user if some system which directly provide recognized faces as well as unknown faces in the image format.

**Functional Specification**

The propose system will capture image and it will detect face of the person.

Then detected face will get recognize by the system itself.

If the system will be able to recognize face of the person then and then only door will open.

An admin or authorized user of the system will get to know about who is entering into the room irrespective of the person is known or not.

**External Interface Specification**

1.Raspberry Pi 3

2.Raspberry Pi camera

3.PIR sensor

4.Stepper motor

**Technical Specification**

We are providing an android app through which user gets the message about who has entered in the room.

This system provides high security as it combines two modern technologies that is face recognition and IoT.

Remote controlling and monitoring are possible because of using IoT and face recognition has made it almost impossible to hack.

The system senses the motion new using PIR sensor then it will capture the image of same using Raspberry Pi 3 camera

The captured image will gate compared which are images present in database

When the proposed system recognizes the face then and then only the system will open the road.

The system will inform the Admin whose face is detected in the camera with the proper image of the person.