EXCEL 2017

MECLabs

Sherlock Holmes

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Abstract

Sherlock Holmes is a home security system. It identifies the person at the door and alerts the owner via email. It enables the owner to open the door from halfway around the world. It's easy, secure and the best thing is you never have to worry about losing your keys again!!

Contents

Chapter 1

Introduction

A PIR sensor is used to detect the presence of any person and a camera is used to capture the images when the presence is detected.

Whenever anyone comes in range of the PIR sensor, the PIR Sensor triggers the camera through Raspberry Pi. The Raspberry pi sends commands to the camera to click the picture and save it. The face detection and face recognition modules run over the image captured. If a face is detected, the recognition module runs over it. After which, Raspberry Pi creates a mail and sends it to the defined mail address with the recently clicked image, and the name of the person, if he/she is present in the database. The user can see the live video by going onto the website ,from anywhere in the world. There is also an option to open and close the door or switch on the porch lights at night.

1.1 Objectives

The objectives of this project are:

1. Electromagnetic door lock that can be operated remotely by the user.
2. Sherlock has the ability to start recording when it sees a person in the camera.
3. If it recognises the person,it alerts the user about the arrival of the person.
4. If unrecognized,it mails a picture of the person to the owner.
5. It can identify the owner and can open the lock automatically.
6. User can login and see the video stream of the camera module through their smartphones.

Chapter 3

Hardware

3.1 Raspberry pi

3.2 PIR Sensor

The PIR Sensor detects any movement made.

3.3 LED’s

They represent the opening and closing of the electromagnetic door lock by glowing on and off.
It also shows the on and off state of the porch lights.

Chapter 4

Software

4.1 Python

Programming language used for the project.

4.2 Opencv

Various modules of opencv have been used for face detection and recognition.

Chapter 5

Estimated Cost

Item	Qty	Cost (in Rs.)
Raspberry pi 3 model B	1nos	2995
Webcam	1nos	500
PIR motion sensor	1nos	175
Micro SD card	1nos	500
LED	2nos	14
Resistors	2nos	2
Total	{	4186

Chapter 6

Conclusion

Home security is of prime importance these days, theft and murder have become very common and death toll of people being looted and killed in their homes is increasing rapidly. In this situation we need the best solution to protect ourselves, which is installing a home security system. As the current system has only basic home security functionality, there is a lot of scope for future developments. Voice recognition can be added to put passwords etc. for making the house more secure. More camera can be installed at various other locations, including back and sides of the house and inside the house.

References

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4. www.youtube.com