

# IOT based Raspberry Pi home security alarm system with e-mail alert using Pi camera and PIR sensors

Prof. Anushree Chausalkar,  
Asst. Prof., ITMGOI,  
Gwalior M.P. India

## ABSTRACT

*In the world of internet of things this project provides a Raspberry Pi based Intruder alert system which not only alerts the house owner through e-mail but also sends the picture of Intruder. This system detects the presence of Intruder and quickly alerts the house owner by sending an e-mail alert. This mail will also contain the picture of Intruder captured by Pi camera. This system can be installed at the main door of office or home and can be monitored from anywhere in the world using email over the internet.*

**KEYWORDS** :- Mobile, Camera, Internet, Chips, Bluetooth, SMS, Web Technique, Electric Circuit.

## I. INTRODUCTION

Wireless security is the prevention of unauthorized access. The aim of this project is to investigate a cost effective solution that will provide controlling of home appliances remotely and will also enable home security against intrusion in the absence of home owner. The system uses latest wireless communication like Bluetooth, Infrared and Wi-Fi access to the system for security and automated appliance control. Home security is considered a major issue where crime is increasing and everybody wants to take proper measures to prevent intrusion.

## II. OBJECTIVE

System will work on different wireless communications and latest mobiles for security purpose. The proposed system characteristics involve remote controlling of appliances, intrusion detection, system security and auto-configuration such that system automatically adjusts the system settings on running hardware support check. The main objectives of the system are as follow:  
To develop home security system that

1. Crime can be prevented by taking rapid action.
3. To the home owner captured image and sound will be shown to intruder. Children at home will remain safe due to authorization and authentication of a system.
4. Efficient communication will take place by using wireless communication technology.
5. Users can store and view data on internet.

## III. DESCRIPTION

Mobiles and desktops can be utilized for this purpose.

- A. Identifying and utilizing the wireless communication devices for input in mobile for WHSSM
  - B. Designing and Developing application in the mobile for the WHSSM
- A. Identifying and Utilizing the wireless communication devices for input in mobile.

For the security purpose and alertness certain input devices are used such as

1. Raspberry Pi camera
2. PIR Sensors
3. Bread Board
4. Jumper Wires

. Here we will develop application on Android mobile.

1. It takes actions –on specific events
2. Accuracy and Efficiency will be measured
3. Testing with different inputs will be made

## IV RESULT

Expected Scientific Results after project completion. System will work on different wireless communications and latest mobiles for security purpose. The proposed system characteristics involve remote controlling of appliances, intrusion detection, system security and auto-configuration such that system automatically adjusts the system settings on running hardware support check. Following results will be obtained by this project.

- Identifying the person which is stored into database by capturing image and sound
- Authorization and Authentication will be given to user
- Safety will be secured by taking immediate actions & Children will remain safe
- Parents will be informed if they are out of town
- Automation will be done upto remote places
- An sms and email alert will be generated.
- Recorded images can be sent directly to the owner.

It will cover special security for the remote places via mobile device and wireless communications inputs.

## V. METHODOLOGY

The solution of the problem is dividing the work into 3 modules.

Modules -:

Module 1- Near field communication (NFC) based security

In this module the detection range or distance of PIR sensor will be tested as well as the PI Camera and we will use Python language to save the images.

Module 2- Android based control

In this module we will create an android based app to create convenience for the user to access the system anytime and from anywhere.

Module 3- Way to SMS notification

We will send the SMS notification along with the mail alert.

Develop software for mobile device which integrates all

1. Capturing of images 2. Sound Recording 3. Wireless Communications devices 4. Email 5. SMS and to identify such electronic devices which uses for home safety to communicate with our programs.

## VI.CONCLUSION

Current State of Research in the problem of the world. Different devices using for home security, our goal is to use only device that is mobile which covers all the functionality and capability. Integration of different parts and their solution can be developed with current devices and applications. Different applications have been developed in this field via computer with PORT. Used computer and develop inbuilt application and computer is taking care of it .Using mobile device, a complete individual system which has all the features combine like audio , video with communication devices with wifi and Bluetooth. Develop all applications for mobile which works on mobile server for the users

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