RAJIV GANDHI INSTITUTE OF TECHNOLOGY

Department of Computer Science and Engineering

Technical Seminar

on

IoT Based Anti-Thief Flooring System

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ABSTRACT

Security and safety have always become a basic necessity for the urban population. With the rapid urbanization and development of big cities and towns, the graph of crimes is also on the rise. To secure and guard our house in our absence, this system came up with the rescue. This system is secure flooring tile connected with IOT when we go out of house. the system is on, then whoever comes inside the house it passes the information over 1OT. This system powered is by Node MCU it includes, two tiles for demonstration purpose. Piezo sensor.Whenever the thief enters in the house, and steps on the floor immediately it will send a message on 1OT system.

INTRODUCTION

AIM: The project aims to design a framework for providing a house owner/member with the immediate notification of an ongoing theft or unauthorized access to their premises.For this purpose, a rigorous analysis of existing systems was undertaken to identify research gaps. The problems found with existing systems were that they can only identify the intruder after the theft, or cannot distinguish between human and non-human objects.

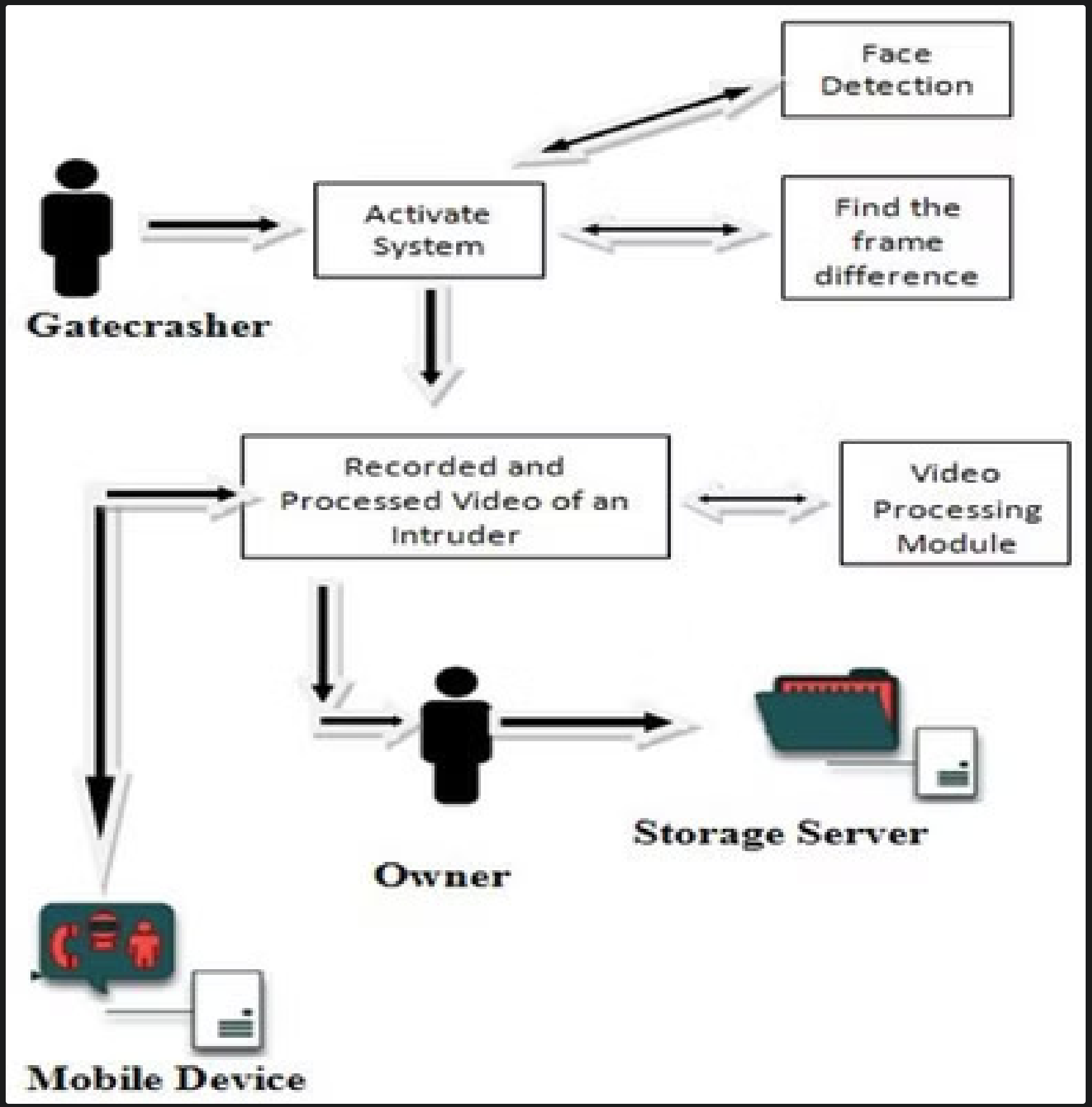
EXISTING SYSTEM

- In existing system IR sensor are used to detect the intruder here IR has to place line of sight that also with hiding with light as it is light sensitive so better idea has to be implemented to solve this intruder issue.
- In this IR based security alarm circuit, we have placed IR LED in front of photodiode, so that IR light can directly falls on photodiode.Whenever someone moves through this beam, IR rays stops falling on photodiode and notify the owners.

PROPOSED SYSTEM

- A door mat alarm is set forth including a flexible mat and encapsulated pressure switches positioned in a matrix throughout the mat.
- whereupon compression of the flexible mat relays pressure to the switches and activatesaremotely positioned transmitter to actuate an alarm.
- A modification of the instant invention includes a transmitter encapsulated adjacent a forward edge of the mat to relay a signal to a remote receiver portably carried by an individual.

BLOCK DIAGRAM



WORKING PROCEDURE

- The main working principle ofthis system is piezo-electric through piezo sensors.
- This system powered is by Node MCU it includes, two tiles for demonstration purpose, Piezo sensor.
- Whenever the thief enters in the house,and steps on the flooring mat immediately it will send a message on IOT system .
- A modification of the instant invention includes a transmitter encapsulated adjacent a forward edge of the mat to relay a signal to a remote receiver portably carried by an individual.
- Whenever the theft is detected,The processor lead to instant notification of intruder by providing real time notification about the potential theft.

HARDWARE DESCRIPTION

1 Node MCU ESP8266 PROCESSOR

- Node MCU is an open-source Lua based firmware and board specially targeted for loT based Applications development.
- It includes firmware that runs on the ESP8266 Wi-Fi SoC from Express if Systems, and hardware which is based on the ESP-12 module.

2 PIEZO SENSOR

- An electrical switch that works based on the principle of piezoelectric effect is called as a piezo sensor switch.
- The Piezoelectric sensor switch can be turned on, by activating the outputof semiconductor devicesuch asafield effect transistor.
- This can be done using the charge generated by the pressure applied to the piezoelectric sensor element.

3 SOLENOID LOCK

- This DC 12V Solenoid Electromagnetic Cabinet Door Lock can be used for locking sell machine, storage shelf, file cabinet and etc.
- The hidden way of unlocking can be used for an emergency. The lock works as the circuits disconnects, and it will unlock as the instant power on it.

4 OLED

- OLED (Organic Light Emitting Diodes) is a flat light emitting technology. made by placing a series of organic thin films between two conductors. DALAUR When electrical current is applied, a bright light is emitted.
- OLEDs are emissive displays that do not require a backlight and so are thinner and more efficient than LCD displays (which do require a white backlight).

5 DRIVER CIRCUIT (L293D)

- It works on the concept of H-bridge. H-bridge is a circuit which allows the voltage to be flown in either direction.
- In a single 1293d chip there two h-Bridge circuit inside the IC which can rotate two dc motor independently.
- Due its size it is very much used in robotic application for controlling DC motors.

SOFTWARE REUIREMENTS

THE ARDUINO INTEGRATED DEVELOPMENT ENVIRONMENT

- Arduino Software (IDE) - contains a text editor for writing code, a message area, a text console, a toolbar with buttons for common functions anda series of menus.
- It connects to the Arduino and Genuino hardware to upload programs and communicate with them.

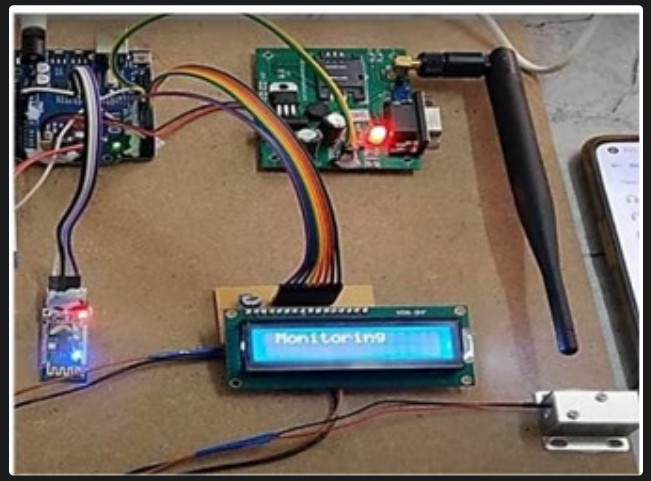
TOOLS

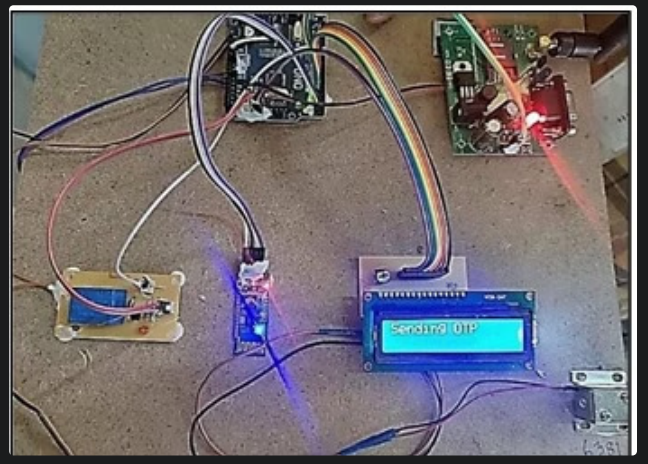
Serial monitor. Board, Port, Burn bootloader and Fix encoding and reloading

LIBRARIES

- Libraries provide extra functionality for use in sketches, e.g. working with hardware or manipulating data.
- There is a list of libraries in the reference. Some libraries are included with the Arduino software. Others can be downloaded from a variety of sources or through the Library Manager.

RESULT





ADVANTAGES

- It provides security and reliability.
- This system can effectively identify a human intruder.
- The processor lead to instant notification of intruder by providing real time notification about the potential theft.
- It also works as informer of the owner.
- Easy to implement and install.
- Crimes will be reduced.

DISADVANTAGES

- Costlier when compared to existing system.
- When processor damaged, Whole system doesn't work.
- The sound was made by device will not be recognised by the owner, if he/she is not present there.

APPLICATIONS

- Home security
- Museum security
- Jeweler shop
- Personal office cabin
- Shopping malls

CONCLUSION

The research work that will be carried out in this thesis would be mainly focused to design and develop efficient and convenient motion detection surveillance i.e, an AntiTheft device to solve security problems which will help to reduce/stop theft. This system is suitable for small personal area surveillance. l.e. personal office cabin, bank locker room, parking entrance.Whenever the motion is detected through. The main Advantage of the project is Easy to implement, Low cost with High quality.

FUTURE SCOPE

For future references, there can also be theft monitoring project based on lOT utilizing the ESP8266 Wi-Fi module, where the system uses live video image processing to identify theft using movement and also show the region where movement appeared. The system instantly identifies fraud that protects offices/homes from theft and allows users to view crime information, display details of the theft and store footage on USB drives.

Thank You