

# HOME AUTOMATION BASED ON INTERNET OF THINGS

*A project report submitted in partial fulfillment of the requirements for  
the award of the Degree of  
BACHELOR OF TECHNOLOGY*

in  
COMPUTER SCIENCE AND ENGINEERING

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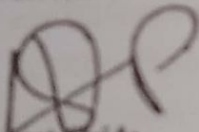
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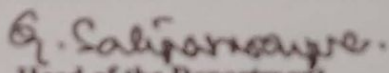
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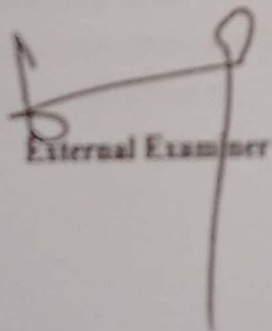


## CERTIFICATE

This is to certify that the project entitled "HOME AUTOMATION USING  
BASED ON THE IOT" is partial fulfillment for the of degree of Bachelor of Technology in  
COMPUTER SCIENCE AND ENGINEERING, at AVANTHI INSTITUTE OF  
ENGINEERING AND TECHNOLOGY, MAKAVARAPALEM, VISAKHAPATNAM is an  
honors work carried out by G.MOUNIKA(15811A052), G.SUSMITHA(15811A052),  
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## ABSTRACT

Home Security Systems are a need of the modern day houses. It is possible to design a simple home security solution by using Raspberry Pi and utilizing the power of Internet of Things. The home security system designed in this project is a simple and easily installable device built using Raspberry Pi 3, Web Cam and PIR Motion Sensor. The Raspberry Pi 3 Model B comes equipped with on-board Bluetooth (BLE) and Wi-Fi (BCM43438 Wireless LAN), so, it can be easily connected with a Wi-Fi Router to access a cloud service. The device designed in this project can be installed at the main entrance of a house. It detects motion of any visitor with the help of PIR sensor and starts capturing the images with the help of a USB web cam. The images are temporarily stored on the Raspberry Pi and pushed to the Google Cloud from where they are sent as email alert to the house owner. So, the user gets the images of any visitor immediately on email which he can check from his smart phone.

The Raspberry Pi connects with the Google Cloud over TCP\_IP stack. The Raspberry Pi 3 is one of the IoT boards which come equipped with on-board TCP/IP stack, so, it can be readily connected to an IoT network. The Pi uses OpenCV library to capture images from the Web Cam and send them over registered Email address of the user. The home security system designed in this project, though being simple, is a powerful application. The user can keep surveillance of his house from anywhere, any time and always by just installing this small device at the main entrance. Many such devices can also be installed to further add security layers. The entrance of any intruder can be detected and alerted by the Email on the smart phone, then the user is free to take appropriate action like calling police, informing law enforcement etc.