



VIGILO

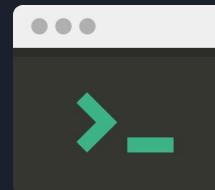
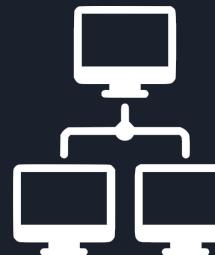


Nicholas J. Hernandez, Hirad Pourtahmasbi, Mohammad A. Sharif



Overview

- A smart home security system that can notify the user when someone has opened the door
- Makes use of computer networks for presence detection, uploading intruder images via the Imgur API, and sending text messages via the Twilio API
- Also allows for SSHing into the Pi to activate the program so that it's not always necessary to connect to a monitor and keyboard





The Hardware

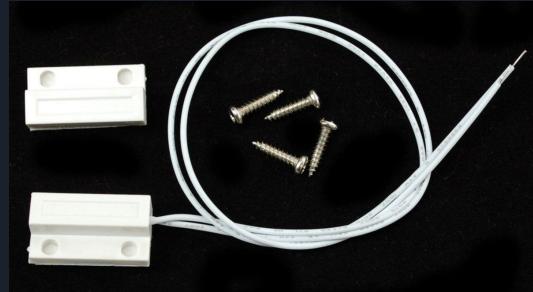
01

Raspberry Pi 3 Model B+



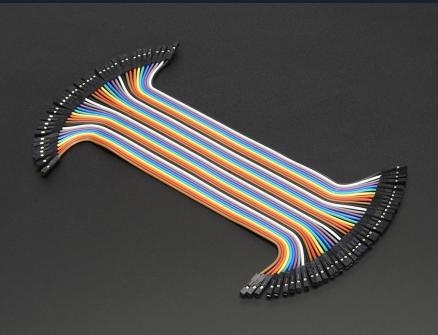
02

Adafruit Magnetic Door Sensor



03

Female to Female Jumper Wires



04

A Soldering Kit





The Hardware

05

Logitech C270 Webcam



06

USB Hub w/ External Power





Software Implementation



Presence Detection with arp-scan

- arp-scan is a command line tool that detects devices on the network
- Using the arp-scan tool we are able to check if the user's phone is connected to the WiFi
- If the device is connected to the WiFi we determine the user is home



arp-scan

Image Capture with Imgur and fswebcam

- Took photo using FSWebCam and stored into the local File system
- Used Imgur Python API to take that file from the file system and upload to an empty Imgur album
- Returns image link to Twilio.



Text Messaging with the Twilio API

- Used the `twilio.client` Python library to send text messages
- Required creating a trial account which is limited to only 1 number
- In the future, move on to free services.



Project Demo

