

Title: **Surveillance updates on Email using Raspberry Pi**

Project Brief:

This security camera on detecting an object will send an Email to the administrator with the pictures of the detected object. Administrator can also watch live streaming of camera from any device that is capable of running any browser.

Features:

- ✓ Object Detection
- ✓ Sends an Email with an image of detected object
- ✓ Live Streaming on any device with a browser

Skills:

Python, OpenCV, Raspberry PI, SMTP (Simple Mail Transfer Protocol) Configuration, IP configuration, Hardware Assembly & Casing.

Hardware Required:

Raspberry Pi 3, PI Camera, Pi Camera Cable, Micro-USB to USB cable, Casing, Power supply adapter, micro-SD card, SD card Adapter.

Software Required:

Open CV, Python, Raspbian OS, Any other OS like windows / ubuntu, Any browser, SMTP interface, IP configuration tool.

Motivation:

Surveillance can be used for security purposes, to watch your pet / babies if they are at home alone. It's not always possible for us to sit on screen continuously and monitor everything. So, here comes this device to rescue you from all this inconvenience.

Application:

- ✓ Intruder / Pet / Baby monitoring system
- ✓ Wildlife photography

Advantages:

- ✓ No need of continuous monitoring
- ✓ On detecting Object pictures are provided on Email
- ✓ Live Streaming on any device

Disadvantages:

- ✓ Picture quality is not great
- ✓ Not good for low light conditions
- ✓ Latency & frame drops during live streaming

Role of Team Members:**Amartya Singh – 17EC088**

Handling software related task like programming, OS, OpenCV, SMTP & IP configuration.

Rahul Thakkar – 17EC094

Managing inventory of all the required hardware parts. Assembling all parts of the hardware according to the software or tuning software according to hardware. To prepare a casing for this device. To test the device in real life situation and provide feedback to software developer to make necessary changes.

Learning Outcomes:

- Learned about working & interfacing of Raspberry Pi & Pi camera using python.
- Learned to configure SMTP & IP according to our need.
- Learned to use Open CV library in python for image processing.
- Learned to complete a task under deadline with team.
- Learned to distribute work in a team according to individual skills.