

## **Project Name: 3118-Image Recognition with IBM Cloud Visual Recognition**

### **PROBLEM STATEMENT:**

In today's dynamic and security-conscious world, there is a pressing need for an efficient and proactive threat recognition system that can rapidly identify potential dangers in public spaces. Existing security measures often suffer from delayed threat detection and limited scalability, leaving critical security gaps. Timely and accurate threat identification, especially in scenarios involving weapons or hostile individuals, is essential for ensuring public safety. The challenge is to create a cost-effective, real-time solution that leverages advanced technology, such as Raspberry Pi and IBM Watson Bluemix Visual Recognition, to detect threats promptly and notify relevant authorities and the public, enhancing security and response capabilities.

### **ABSTRACT:**

The main aim of this project is to propose a Threat alert system using Raspberry Pi and IBM Watson Bluemix Visual Recognition. By the successful implementation of the project we were able to detect the object in the captured image. After the detection we can send a push notification to the subscribed user that there is a person with the weapon that is attacking a civilian. Here the location of the captured image is sent in the python code and as the code runs the image is sent to Watson Developer Cloud, which detects the weapon in the image. The result of the Watson Developer Cloud is shown in the output of python code. Now this output is used as input to another section of the python code which sends the detected weapon as a push notification to subscribed user using Remote Alert app. Thus,



subscriber knows that there is a person with some weapon at certain place.

#### **HARDWARE USED:**

1. Raspberry Pi: Raspberry Pi is a single-board computer that serves as the hardware platform for image capture and processing.

#### **SOFTWARE USED:**

1. IBM Watson Bluemix Visual Recognition: This cloud-based AI service from IBM is used for object detection and recognition in the captured images, specifically for identifying individuals with weapons.

2. Python: Python is the primary programming language used for developing the project. It's employed for controlling Raspberry Pi, sending images to Watson Bluemix, processing results, and sending push notifications.

3. Remote Alert App: The Remote Alert app is used to facilitate the push notifications to subscribed users when a potential threat is detected. It likely involves software development for notification management.

These components together form the foundation of your Threat Alert System, with Raspberry Pi for hardware image capture and software components like IBM Watson Bluemix Visual Recognition, Python for programming, and the Remote Alert App for user notifications.

#### **EXISTING SYSTEM:**

Existing threat recognition systems encompass a range of technologies, including surveillance cameras, video analytics, facial recognition, and biometrics, to enhance security in various domains. These systems employ machine learning and AI algorithms to detect anomalies and potential threats in real-time. But Existing threat recognition systems often suffer from delayed or inaccurate threat identification, relying on human intervention for timely responses. They may lack real-time notifications and struggle to adapt to evolving threats. Additionally, cost constraints and scalability issues can limit their effectiveness, leaving security gaps in critical areas.

## **CONCLUSION:**

In conclusion, our Threat Alert System represents a significant leap forward in enhancing public safety and security. By combining the power of Raspberry Pi and IBM Watson Bluemix Visual Recognition, we have successfully developed a real-time threat recognition solution. It can rapidly detect potential threats, particularly individuals with weapons, and instantly notify subscribed users with precise location details. This innovative system not only addresses the shortcomings of existing security measures but also offers cost-effective scalability and adaptability. With the potential to prevent security incidents and protect lives, our project represents a promising step towards a safer and more secure society.