Mathematical Statistician and Engineering Applications
ISSN: 2094-0343
2326-9865

Surveillance and Patrolling of Women Safety Using Visual Trigger Automation

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Article Info
Page Number: 1440-1446
Publication Issue:
Vol. 71 No. 4 (2022)

Article History
Article Received: 25 March 2022
Revised: 30 April 2022
Accepted: 15 June 2022
Publication: 19 August 2022

Abstract

Patrol and security both rely on surveillance. The majority of the work involves spending a lot of time watching out for bad things to happen. This is a rather boring chore, but it is one that we must complete. Before we develop convoluted hypotheses, let's consider how surveillance functions naturally. When we see something out of the ordinary when watching a video broadcast, we act. In essence, our technology should scrutinise each frame of the video in an effort to find something out of the ordinary. Does this procedure sound familiar? Our idea is to trigger a notification to the nearby control room when some violence carried over against women is detected. The CCTV camera will be connected to the server where the processing of Video frames takes place, once a violence or similar activities is detected it will notify the control room in a seamless and effective manner. Our solution is divided into two parts, CCTV Surveillance automation and Intelligent Mobile application for Women.

Keywords: Surveillance, CCTV, mobile app, deep learning.

1. INTRODUCTION

Within the current circumstance, ladies are keeping pace with men in each walk of life but tragically at taken a toll of being subjected to manhandle, badgering, and savagery in open and indeed at their claim houses. They cannot step out of their houses at any time of the day, cannot wear dress as per their will, nor can they indeed go for work in peace. There's a few kind of restraint that ladies are subjected to which not as it were takes absent their sense of opportunity but moreover smashs their certainty and dreams. Most of the IoT based gadgets created for ladies security make utilize of a mobile-based application to actuate the framework. This, in any case, diminishes the utility of the gadget in case of emergencies as the utilization of versatile phones within the nearness of an aggressor might not be

attainable. Our framework, on the other hand, does not utilize any versatile interface. It is entirely an equipment framework that gets enacted and begins working on customizable voice command. It is simpler to actuate and gives way better security.

In today's world, "ladies security has ended up a foremost problem in our nation as ladies can't step out of their house at any time, particularly amid night". It is basically "due to fear of viciousness against them or being physically or sexually manhandled". The distress of badgering against ladies isn't as it were the condition at exterior but it may too happen at homes. The most perfect way to decrease likelihood of getting to be a casualty of savage wrongdoing (theft, sexual attack, assault, household viciousness) is to recognize, guard and look up assets to assist you out of dangerous circumstances. In the event that a ladies is in problem or get part from companions amid a night out or somebody is taking after with terrible purposeful (sexual attack) or do not know how to discover back home at that point this gadget with her will protect her and bring help when she needs it by giving her current area and wellbeing situations to her partners and device middle through SMS and call. This device not only offers family and police support but also aids in getting medical support as fast as possible.

Objectives:

- To provide complete security to women, especially in metropolitan cities
- To reduce the time of information gathering for First Investigation Report
- To make women feel secured and independent
- To introduce new method of monitoring system in the global technological corridor.

The organization structure of this work is as follows: chapter 2 deal with literature survey, chapter 3 offerings about proposed system architecture. Chapter 4 deal about experimental results and chapter 5 explain about conclusion of our work.

2. RELATED WORK

Mobile Application such as "Kaavalan" proved to be the significant impact of technology in servicing the people in emergency situations. To move one step ahead, we adopt a method called "Yelling" (2018).

Humans, when they are trouble will shout and make their emergency situation felt by others. Similarly, once a lady lands in a trouble she needs to trigger the alarm in the app, the alarm not only notifies the control room but also sends packets to the nearby devices which would help track of the nearby persons who is present at the crime spot. This will prove to be a faster method of accessing the First Instance of the crime scene (worst case) or we can even trace if the device that received the packets was if the victim's mobile (Best Case)

The smart surveillance system includes camera which can detect violent activities such as eve-teasing, violence against women, etc..., it will automatically alarm and notifies the control room. The camera also capable of receiving the packets sent by the mobile application and tags the object and persons nearby the crime scene (Best Case).

Road monitoring is also very "essential to carry out numerous actions such as pedestrian identification, suspicious behaviour". This system evaluates the pixels of the track image. So far, there are various plans for daytime activities, but night activities will not be held. This

technique centers on the detection of inadequate practice during the night. Because the device is vision-based and can recognize paths according to the scenery, it becomes difficult when other objects, such as birds or cars, enter the picture. A surface reflection model using an infrared camera can help here to distribute the intensity of different pixels.

Ghanem Osman Elhaj Abdalla proposed a concept a Reconnaissance Framework utilizing Web convention of Raspberry Pi in which Raspberry Pi and web convention are utilized to construct an observation gadget with a spy robot. It talks about diverse approaches to border reconnaissance.

3. SYSTEM ARCHITECTURE

The foremost reason of this work is to supply security to the women from risky conditions. Once the microcontroller switch ON the buzzer appear inside the contraption so that adjoining individuals may take note the fundamental condition and may come to ensure. And "microcontroller sends the SMS of current zone and beat scrutinizing to the enrolled convenient number of the family portion and police with the help of GSM module". The GSM sends the "current range and other data at each 10sec so that on the off chance that casualty is changing its current zone diligently at that point that can be easily taken after by police". And this GSM module as well calls the family portion and police station. In case on the off chance that the beat examining besides goes bizarre at that point the microcontroller command the GSM module to send the beat examining by SMS and to call the crisis vehicle so that the incite helpful offer help can be given.

In this system, IR sensor is utilized to form the robot move thus taking after a specific way. Sound sensor is utilized to know the sound inside the particular locale. IOT is utilized to send the capture picture to the individual. Infrared light is utilized by night vision cameras to clarify pictures inside the gloomy.

Sound Sensor may be a one sort of module utilized to recognize sound and utilized to recognize the sound escalated. For the consolation of utilize, able to alter the exactness of this sensor. The "sound recognizing sensor works inside the same way as our ears do, utilizing a stomach that turns vibration into signals". Motor drivers serves as an affiliation between motors and control circuits. The "controller circuit works on moo current signals".

The following diagram (figure 1) provides visual precision of the system,

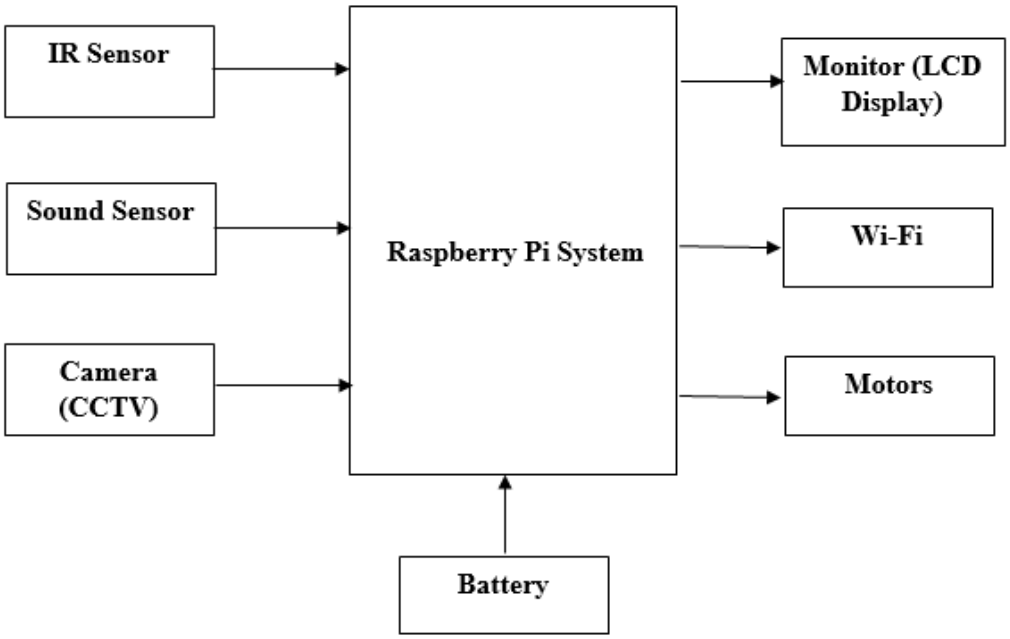

Figure 1: Block diagram of our proposed system

Methodology:

- In requirement analysis the required for accessing is to be collected from the targeted audience.
- For all the data collected need to determine the model to represent the knowledge.
- To construct rules needed while designing the App
- Implementation of standard Deviation with neural networks as stated in the problem definition.
- Testing is performed in different scenario.

4. EXPERIMENTAL RESULTS

The state of the art subject matter is that, Deep Learning networks used to process the video frames and detect the violence, eve teasing etc.., Figure 2 shows the performance of R-CNN, fast R-CNN and faster R-CNN.

	Region-based Convolutional Neural Network (R-CNN) (Seconds)	Fast R-CNN (Seconds)	Faster R-CNN (Seconds)
Test Time per Image (with proposals)	50	2	0.2
Speedup	1×	25×	250×
mAP (VOC 2007)	66.0	66.9	66.9

Figure 2: Performance of R-CNN, fast R-CNN and Faster R-CNN algorithm

Wide area surveillance using the rover's night vision cameras and “an autonomous system where when a sound is detected the robot follows a specific path, moves to the detected location, captures the area and alerts the police via IOT Run station server transmission”. The concept is a smart, automated technique for patrolling safe women at night. The proposed design addresses the main problem women face at night while providing security through advanced technology.

5. CONCLUSION

The social impact of this work is very large, since the violence and crime against women are increasing drastically in the recent times. This study shows that human does not do any crime or violence if he/she strongly believes that they are being monitored. Hence monitoring can reduce crimes drastically. Monitoring also increases the self-discipline of a citizen/individual which in turn helps us to make a good society.

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