INTERNATIONAL JOURNAL OF ADVANCED INNOVATIVE TECHNOLOGY IN ENGINEERING

Published by Global Advanced Research Publication House Journal

Home page: www.ijaite.co.in

Women Safety Using Band

[1]Priyanka Jumle, [2]Priya Patil, [3]Santoshi Mahato, [4]Prof. Devki Nandgaye

[1,2,3,4]Department of Information Technology, Nagpur Institute of Technology, Nagpur, Maharashtra, India

[1]priyankajumle27@gmail.com, priyapatil0758@gmail.com, antoshimahato24@gmail.com, nandgayedevki@nit.edu.in

Article History

Received on: 05 April 2023

Revised on: 10 May 2023

Accepted on: 22 May 2023

Keywords: IoT, Bluetooth, RS232, GPS, GSM, Camera, Arduino.

e-ISSN: 2455-6491

DOI:

Production and hosted by
www.garph.org

ABSTRACT

In modern times, women are physically harassed in public places, schools, workplaces, or while traveling. Most cases of physical harassment occur when women are alone or traveling. Harassment has always been a major problem and poses a great threat to our society. In daily life, this problem has a great impact on people and especially on women in our society who feel unsafe when they leave the house. Many of us are trying our best to prevent this problem, but we are facing a problem. There are so many apps and devices that are supposed to protect women from assault, but unfortunately, it is not enough. There are many Android apps for smartphones, but for those who do not use smartphones or do not have their phone at hand at work, this proposed system will be helpful. The system proposes a smart portable device for security that includes various modules such as GSM, GPS and camera. The proposed system will help women in emergency situations by providing them. the implemented system will help women in emergency situations by activating the modules by clicking the switch and allowing them to defend themselves in case of emergency.

1. INTRODUCTION

Bullying has always been a major issue and poses a great threat to our society. In daily life, this problem has a great impact on people and especially on women in our society. Every day about 87 rape cases is registered in India. And about 32033 women have been raped till date. And this number is increasing by 7% every year. Moreover, the number of physical harassment and molestation is also increasing. According to WHO (World Health Organisation), 35% of women are affected by physical and sexual violence. Even in developed countries, physical and sexual violence are unfortunately all too common. This has a huge impact on people's thinking and especially on youth. This is the reason why women live in insecurity. This is the biggest challenge for the world to protect women from sexual or physical violence. Many of us are trying our best to prevent this problem, but they are facing some problems. There are so many applications and devices to protect women from assault, but unfortunately, they are not enough. Many applications cannot be activated without the user's intervention or the Internet. Even victims who have their cell phone

with them cannot use it to call for help or massage immediately. The attack may be unexpected or sudden, and the victim is unable to call for help at that moment. Sometimes women carry their cell phones in their purses, and the victim is unable to call for help. Unexpectedly, the attacker attacks the victim and the victim is confused, so she is not able to call for help. To overcome these drawbacks and provide security, we combined several such concepts and proposed our latest IOT-based security concept SAFETY BAND. The Internet of Things (IoT) is a system of interconnected computers, mechanical and digital machines, objects, animals, or humans that are equipped with unique identifiers (UIDs) and can transmit data over a network without requiring human-to-human or human-to-computer interaction. SAFETY BAND is an important contribution to women's security. It is an elegant and portable band that looks like a brass band. It is a personal security product to be safe. It is a user-friendly application that anyone wearing the security bracelet can easily install on their smartphone. With a single click, the software sends the live location via GPS and an emergency message with photo to the preset contacts to prevent unfortunate incidents of crimes against women.
"SAFETY BAND" works with IOT-based software. It connects to any wearable device in a few steps for easy access. By selecting the desired contacts via WhatsApp and text, a SOS message with photo, current location and call are sent to the selected contacts. Also, to the nearest control centre via the system GPS. This is a very inexpensive band. This will give security and help the victim in an emergency situation.

2. RELATED WORK

There is a variety of applications for women protection when they are in dangerous situation. The disadvantages of using these applications are they only send the alert messages to the saved contacts. Because of previous systems there is less possibilities of overcome the dangerous situations of women. Previous applications also have GPS tracking system for to track the women location but it has not specific range. Existing system don't have the feature that is it don't send the alert message to nearby cell phones

In [1] presents a wearable safety device for women using the Arduino. The purpose of this device is to safeguard women in the event they might face any danger.

In [2] propose to design advice that will bridle these challenges. Based on the study undertaken, we realize that a safety device should first grant the victim the control of the situation. Hence, it was decided that the attacker must first be struck or distracted which will yield some valuable time for the victim to probably contact a safe-house or run to safety.

In [3] proposed a Mobile Based Application for Women's Safety with GPS Tracking and Police Notification for Rizal Province, is intended to provide help to authorities prevent crimes before it happens.

3. PROPOSED SYSTEM

The women's protection application is designed to prevent crimes such as assault kidnapping and stalking. The figure 1 shows the complete architecture of proposed system, The device can be activated by just pressing the emergency button once. This device gets activated and sends an instant location with a distress message to the police and pre-set number through a GSM module. And after clicking a button to click the picture and to send the message with the help of WhatsApp and text. The hotspot also generated its own unique id this id adds in this module for sending messages. The location is located using GPS. This GSM Modem (sim900) can accept any GSM network operator SIM card and just like a mobile phone with its own unique phone number.

The plus point of using this modem will be that you can use its RS323 port to communicate and develop embedded applications. It can be used to send and receive SMS or make/receive voice calls. This module is used to hotspot for the sending message for the victim. In this project we develop an IOT Based Women safety using band for the security of women. Now moving to the implementing system automated with the use of audio recorder, GPS and GSM.

Figure1: Complete Architecture of the proposed system

A. Components Used

Bluetooth Module: Bluetooth technology allows devices to communicate with each other without cables or wires. Bluetooth relies on short-range radio frequency, and any device that incorporates the technology can communicate as long as it is within the required distance.

GSM Module SIM 900: A customized Global System for Mobile Communication (GSM) module is designed for wireless radiation monitoring through Short Messaging Service (SMS). This module is able to receive serial data from radiation monitoring devices such as survey meters or area monitors and transmit the data as text SMS to a host server.

RS232 port: An RS-232 serial port is most often used by repair technicians to perform diagnostics and service updates. It may also be used to control a device when connected to a computer running a home automation system or Custom Integrated Audio/Video (A/V) system, such as the CAV-M1000ES Multi-room A/V Distribution System.

Camera: A camera is an optical instrument that captures images. Most cameras can capture 2D images, while some more advanced models can capture 3D images. At a basic level, most cameras consist of a sealed box, with a small hole that allows light to pass through and capture an image on a light-sensitive surface.

Hotspot: A hotspot is a physical location where people can access the Internet, typically using Wi-Fi, via a wireless local area network (WLAN) with a router connected to an Internet service provider.

PCB Design: A printed circuit board, or PCB, is used to mechanically support and electrically connect electronic components using conductive pathways, tracks or signal traces etched from copper sheets laminated onto a non-conductive substrate.

Arduino: Arduino is an open-source electronics platform based on easy-to-use hardware and software. Arduino boards are able to read inputs - light on a sensor, a finger on a button, or a Twitter message - and turn it into an output - activating a motor, turning on an LED, publishing something online.

SIM Card module: A SIM card, also known as subscriber identity module or subscriber identification module (SIM), is an integrated circuit intended to securely store the international mobile subscriber identity (IMSI) number and its related key, which are used to identify and authenticate subscribers on mobile telephony devices.

GPS Tracker: GPS tracking requires a tracking device installed in a vehicle, on a piece of equipment, or worn by a person. This tracking device for vehicles provides information about its exact location so that it can report details on where a vehicle, equipment, or person is.

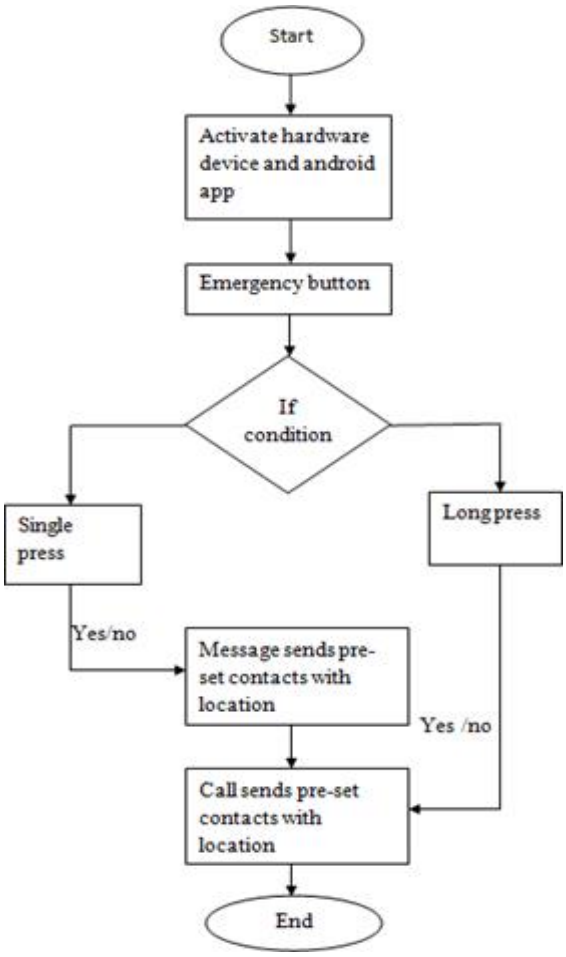

Figure 2: Flowchart of the Proposed System

4. EXPERIMENTAL SETUP

Figure 3 shows the actual implementation of the proposed model. The working of all the parts is being seen.

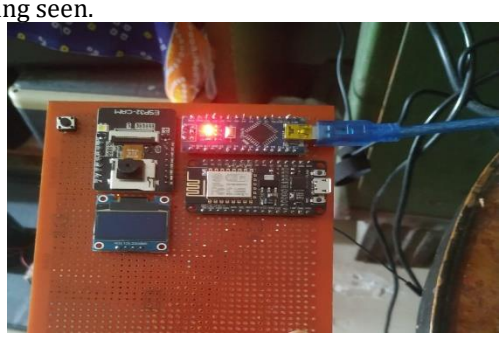

Figure 3: Experimental Setup of the Proposed System

CONCLUSION

The proposed design of the Women Safety Ring will help women to be safe in any critical situations like rape, harassment, molestation, etc. in society. The prototype of the system developed is user-friendly, cost-effective, and light weighted. Whenever a woman feels insecure or threatened, this system can be used to provide efficient results just by the push of a button. The system helps the victim to reach the near and dear ones as soon as possible in case of emergencies. The programmed application stores the recorded audio as well as updates the victim's location periodically. This is very helpful because in case of mobile phone damage.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

FUNDING SUPPORT

The author declares that they have no funding support for this study.

REFERENCES

[1] Ye Zhang, Asif Ali Laghari, Muhhammad, Rizwan Asif "Image processing based Proposed Drone For detecting and controlling street Crimes" 2017 IEEE 17th International Conference on Communication Technology (ICCT), 27-30 Oct.2017.

[2] Amarjot Singh, Devendra Patil, S. N. Omkar "Eye in the Sky: Real-Time Drone Surveillance System(DSS) for violent Individuals Identification using Scatter Net Hybrid Deep Learning Network" 2018 IEEE/CVF Conference on computer Vision And Pattern Recognition Workshops (CVPRW), 18-22 June 2018.

[3] Margherita bonetto, Pavel Korshunov, Giovanni Ramponi, Touragj Ebrahimi "Privacy in Mini-Drone based video survelliance" 2015 IEEE International Conference on Image Processing (ICP),27-30 Sept.2015.

[4] Ya-ching chang, Hua-Tsung Chen, Jen-Hui Chuang, I-Chun Liao "Pedestrian Detection in Aerial Image using Vanishing Point Transformation and Deep Learning" 2018 25th IEEE International Conference on Image Processing (ICIP),7-10 Oct. 2018.

[5] Sunyoung Cho, Dae Hoe Kim, Yong Woon Park "Learning drone control actions in Surveillance videos" 2017 17th International conference on Control, Automation and Systems (ICCAS),18-21 oct.2017.

[6] Dhruv Chand, M.; Sankaranarayanan, S.; Sharma, C., "Project Jagriti: Crowdsourced child abuse reporting," Global Humanitarian Technology Conference (GHTC), 2014 IEEE , vol., no., pp.609,613, 10-13 Oct. 2014 doi: 10.1109/GHTC.2014.6970346

[7] Mona Chaware et al, "Smart Safety Gadgets for Women: A Survey", Journal of University of Shanghai for Science and Technology, 2020.

[8] Ravi Sekhar Yarrabothu and Bramarambika Thota, "ABHAYA: An Android App For The Safety Of Women", 2015 Annual IEEE India Conference (INDICON), 2015