

WOMEN SECURITY: A INSPECTION

Prof.Khatal Sunil.s¹, Aher Rutuja. K², Shaikh Fiza.H³, Datir Komal.M⁴, Jadhav Nikita.B⁵

Department of Computer Engineering,
Sharadchandra Pawar College of Engineering, Dumbarwadi (otur), Junnar, Pune.

Abstract - In today's generation girls security is incredibly necessary as we have a tendency to area unit going more day-by-day crime is increasing speedily on hourly basis. As day-by-day crime is increasing the a lot of solutions have being developed in code form to resolve this serious issue. A crowd of IOT (web Of Thing) a code application is offered that are going to be useful for ladies to urge secure in savage condition. By causation alert message to the registered contacts. equally there area unit good hardware devices that embrace of sensing element and microcontroller will which that may management the savage scenario These gadgets can turn out screaming alarm or turn out electrical shocks to the aggressor. The main motive of this paper is to examine the varied IOT and machine learning application {for girls|for ladies for girls}'s safety and determine that what quantity IOT application area unit helpful for women to urge secure in tough scenario. to resolve this issue, it's taken 5 years of study. The connected literature has been reviewed mistreatment Google scholar, science direct and citeseer . we have a tendency to seen the good code applications with constitutional programming area unit more practical as compared to hardware gadgets for securing the ladies in dangerous circumstances.

Key Words: IOT, Machine Learning, Women's safety, IOT based solution, Registered contacts

1.INTRODUCTION

Women security has become an outstanding issue everywhere the planet. In India solely the rate against to girls has accumulated speedily in previous few years. in line with the National crime record bureau (NCRB), India recorded eighty-eight rape cases each day in 2019.NCRB report highlights that rape vulnerability of a lady or a girl has increase up to forty-four is during the last ten years. The term "Internet of Things" (IOT –Internet of Things) additionally called internet of things [2] refers to any or all those objects or devices of lifestyle that area unit connected to the net which have some quite intelligence with that knowledge are often changed among varied devices. Moreover, there area unit some robot applications that may facilitate the ladies in would like by causation risk notice to noncommissioned contacts [3]. Similar application area unit developed that use microcontroller like Raspberry –pi or Arduino that capture the photographs of the situation and send notification to registered mobile numbers that has been established to be useful for ladies [4.] additionally, several hardware gadgets are designed that uses GPS (Global Positioning System) to observe the situation of the device. This device are often utilized by women to send alert messages to their relatives or to the station [5].. These devices additionally use sensors for incessantly observation variables like temperature, anxiety and send the info to the

fogeys that guarantee welfare of their social group and kin within the scenario of would like. amazingly, good clothes embedded with Associate in Nursing device has additionally been designed which may send electrical shocks to the perpetrator that may facilitate the victim to abscond[6]. Crime against girls like rape, acid throwing, dower killing, homicide and forces whoredom of your women has been according in India police record shows a high accident of crime against girls. The national crime records bureau according in 1998 that by 2010 growth in rates of crimes against girls. Would exceed the growth rate earlier several crimes against girls weren't according to police because of social stigma connected to rape and molestation. Official statics show a dramatic will increase within the range of according crimes against girls. Acid throwing: A Thomas Reuters foundation survey says that India is that the fourth most dangerous place within the world {for girls|for ladies for girls} to measure within the survey itself has been critics for bias women happiness to any category, caste, creed, faith are often victims of this cruel variety of violence and disfigurement, a pre-mediated crime meant to kill or injure for good and act as a lesson to place a girl in her place. Women's and women capture: If one were to appear exclusively at the year 2012 crimes against property took up the biggest share within the IPC pie, recording regarding 579,510 cases or twenty-four.3% of the full IPC crimes. this is often around per cent above the 572,604 according in 2011.Theft accounted for the best range of cases beneath this class with 337,407 cases being recorded. Out of those, 154,351 cases were auto-related. Crimes poignant public safety;

that embody combustion, riots etc., had the second largest share within the IPC crimes, recording regarding 418,793 cases that well-grooved seventeen.5% of the IPC crimes. this is often a tenth jump from the 380,411 cases according in 2011.As you'll see from on top of, there have been regarding 236,608 crimes poignant life that were recorded in 2012. this is often a rise of twenty-two from 2011. Out of those murder accounted for thirty-four,434 of the cases. The agenda of this paper is to ponder the study of ladies safety in India from 2013 -2020 and determine the effective technique during this facet we'll additionally try and determine the un-notices issue and planned model mistreatment IOT that may be employed in future for women's physical security. The Second section gift the literature review follow by section 3 that describe methodology used for mensuration the women's security mistreatment IOT. Section four provides conclusion and future scope which can enhance the possibility of securing the ladies.

2. LITERATURE SURVEY

With the priority of saving the girl from evil crimes like molestation variety of safety applications are developed. a number of such applications supply the solutions for atrocities of ladies exploitation mobile buttons whereas some applications area unit designed within the type of hardware gadgets with sensors and microcontrollers etc. several systems use technologies like SOS (Save our souls) message, GSM (Global System for Mobile) and Wi-Fi (Wireless Fidelity) networks for message communications. we tend to reviewed some previous solutions for girls safety that area unit explained any.

Ashiq & Manivelprabhu, 2013[8] have designed the electrical shock antenna watch with integral microcontroller that together with passing shock to the suspect sends the SMS (Short Message Service) to the pre appointed contacts and police office within the shut space. it's price economical regular watch which will facilitate the ladies at risk things.

V. Pawar & Wankhede, 2014[9] have developed associate degree humanoid application "SCIWARS" which might send the text message or voice recording to the selected contacts other by the user whereas registration on this application. This application works on 2 totally different modules together with the power that whether or not the victim needs to register the grievance to police or not. Moreover, the applying tracks the situation of the victim with the assistance of GPS.

Ravina et al., 2014[10] has designed associate degree humanoid application for sensible phones supported voice recognition and send short text messages to registered contacts. the most options of this application area unit conversion of speech to text and dealing even the transportable is latched.

Nadaf et al., 2014 [11] has developed associate degree humanoid application known as "B'Safe & B'Secure" for women's security. If the user is in hassle, the data is delivered to the saved contacts together with the victim's location with the assistance of SOS technique. This finesse of this application is that it works within the absence of net affiliation. Roy et al., 2015[12] has developed a tool with the assistance of pervasive computing called "Move Free" that has been designed exploitation machine learning approach supported supervised learning that verify the victim with the modified values of body variables. For productive implementation of the applying facilities like Bluetooth, net property is needed. In unfortunate things, associate degree alert message may be sent to a few manually hold on mobile numbers.

Chand, Dhruv et al., 2016 [13] effectively engineered a mobile application "WoSAPP" for lady security with straightforward computer programme. The user of this application will activate this application by shaking the mobile that sends the alert message to near police office that successively give notice the user's inscribed contacts. The Mangalore police office in state, Bharat devoted a hotline to the emergency calls utilizing "WoSAPP".

Ansari et al., 2016 [14] planned a sensible transportable device for safety purpose of ladies that sends the message and live video to predetermined contacts. Force sensing element, Raspberry pi as a microcontroller and GPS/GSM module area unit wont to preprogram the device. The widget gets activated on pressing the push {which will which may which might} turn out the high sound buzzer within the close so near folks can facilitate the victim. Thota & Yarrabothu, 2016 [15] given

a mobile application "Abhaya" for the women's safety that just in case of unsafe circumstances, sends the data regarding gift location of the user within the type of text message to the selected contacts together with telephone call to the primary registered contact variety within the app. The peculiar feature of this mobile application is that it sends the message to the noncommissioned contacts often when 5 minutes interval until the user press "stop" button.

Bhavale et al., 2016 [16] have planned Arduino primarily based wireless sensing element kit that is economical to produce facilitate to the poverty-stricken victim. On pressing the button, the applying can capture the picture, collect users data to send notification to registered phone numbers with link of captured image.

Harikiran et al., 2016[6] designed a tool "smart band" that is connected to the phone via Bluetooth that trigger an indication and transfer it to the sensible phone, the applying is pre changed and stacked with all the specified data which includes human conduct and responses to numerous circumstances like outrage, dread and tension. At no matter purpose it gets crisis flag, it'd send the demand for facilitate to the final population in shut region for early activity.

Gaonkar & Megashree 2017 [17] developed associate degree IOT Product within the type of sensible watch specifically "SAVVY BAND" for girls to trace their motion just in case of emergency things. This device collects the data from body parameters like vibrations of hand and body together with the temperature. The sensing element measures overall sun set ultraviolet irradiance, the mixture of the fragments of sun controlled ultraviolet transmitted significantly and people scattered within the atmosphere. The device sends the coordinates of the victim in have to be compelled to the closest police office requesting immediate action.

Abhipriya et al., 2017[18] designed a image exploitation NS2 machine for girls safety in psychological feature networks. during this image a nonstop location chase via message is shipped to the secondary users when each 2 minutes Nevertheless, if unfortunate event happens at remote space that's out of frequency, then this application cannot work.

Vahini & Vijaykumar, 2017[19] projected 2 wearable devices; articulation radiocarpea watch and case camera that have some further options like Geo fencing and a camera in case which might take the image of assaulter once SoS button is ironed. They projected a technique during which a lady should press a button for 2 seconds Associate in Nursingd an alert message and attacker's image are going to be send to all or any hold on emergency contacts.

Shravani et al., 2017 [20] have developed a model includes of Arduino UNO, Flex detector, GSM, GPS, screaming alarm, Shock generating circuit and tear gas activation mechanism. The device gets activated once the flex detector produces a trigger signal. The place of the victim are going to be copied and message are going to be sent to the crisis contacts. On feat of the caution, alarm sound are going to be created to urge out for facilitate. The shock generating circuit starts generating shock to the assaulter permitting the victim to flee from things. The tear gas mechanism might avoid the assaulter by spraying the tear gas that helps the victim to flee instantly.

Pande et al., 2018 [3] have projected a computer code application particularly "Helping Hands" that facilitate the victim in peril by causation message of user's location to the registered contacts. it's totally different choices out of that push

button sends danger notification as instant message to the noncommissioned contacts.

Vijayalakshmi metric linear unit, 2018[5] has projected the good wearable band that consists of sensors which is able to live totally different parameters unceasingly send the values to the guardians and police leads to trailing the device within the emergency state of affairs. These reading values of detector area unit compared with threshold values and if the values crossed the limit, then imperative message will be sent to the police. Some of the higher than mentioned systems area unit mobile applications that rely upon the mobile network however in some things mobile applications cannot send the locations persistently because of lack of power and knowledge information measure. Moreover, typically the victim isn't capable of victimisation mobile to send the alert message. additionally, some applications need registration key to be remembered. However, good gadgets will be decline body and unceasingly sensors collect and send info to the selected users which will facilitate the ladies in peril things additional effectively.

3. METHODOLOGY

This section describes the ways used for measuring and analysing the literature. Fig 1. (Block diagram) shows the steps followed for the strategy adopted that includes of 2 stages that's initiation contemplation and organizing contemplation.

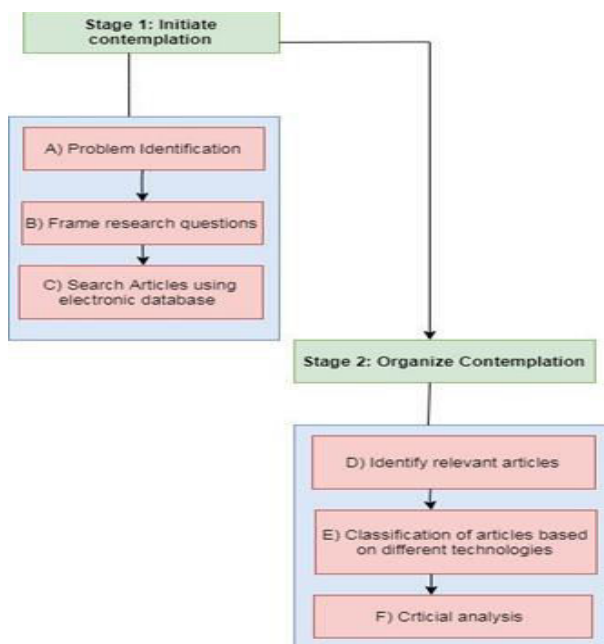


Fig. 1. Block Diagram of Strategy followed

In stage 1, drawback contemplation the matter is known so the descriptors square measure framed following that the connected articles on the subject being researched.

Similarly, in stage 2, the identification of relevant articles so the articles are classified supported 2 completely different technologies once that assessment are performed.

A. drawback Identification

According to the National crime record bureau (NCRB), India recorded eighty-eight rape cases a day in 2019. NCRB report highlights that rape vulnerability of a woman or a ladies has increase upto forty-four is during the last ten years. doubtless, technology has been operating vastly to save lots of the ladies from these styles of unfortunate occurrences. The package

developers have planned solutions within the style of mobile applications and sensible hardware-software integrated devices. we tend to synthesized the various scopes out there for the security of ladies victimization IoT. For fulfillment of this analysis, the literature survey of 5 years in context to IoT solutions for girls safety and security has been done.

B. Frame analysis queries

A research question could be a dependable examination regarding a selected concern or issue. once investigation of various specifications we tend to determined to consider some crucial metrics like Condition of the sufferer whether or not she is in a position to use or operate the application/gadget or device in unsafe state of affairs. Victim is literate enough to use the appliance or device.

C. Search articles victimization electronic information service

This segment presents the delicate parts of our survey convention. Some digital libraries that helped neutrally to filter the hunt for primary studies square measure Google Scholar Science direct analysis gate Citeseer library (citeseer.ist.psu.edu).

D. Determine relevant articles

We assessed the character of the essential investigations by buildup mixture of descriptors. The attendant inquiry question was created by increasing the keywords with conceivable equivalent words. The relevant articles were searched with keywords like

- Women's safety •

Women's safety in Asian nation

- Women's safety with IoT

- Applications used for Women's safety

Utilizing the incorporation and rejection criteria and quality agenda, some immaterial articles were aloof from the search record. The unrelated papers were removed because of redundancies and providing spurious data.

E. planned classification (IoT based mostly ladies security)

to start with, the IoT proposals to affect the problems associated with ladies security square measure classified into 2 classes as represented in fig. a pair of (Categorization of IoT solutions). To make the planned survey to figure we tend to reviewed the literature on the security of ladies on the premise of effective use of hardware gadgets and mobile applications. each classifications have the nice answer for the security of ladies, in some cases they are going hand in hand. Second classification of ladies safety is evolved around developed mobile applications.

These mobile applications are often within the style of voice recognition application [10]. this kind of application could convert the voice message given by victim into the text and deliver to any or all her mentioned contact numbers. Likewise, some applications are often activated by pressing the degree button / power button [11] for a few seconds or shaking the phone for such as variety of times.

Another class of cellular applications square measure GUI based mostly within which clicking on button or facilitate button offers answer by causing alert messages to selected contacts in perturbing state of affairs. As shown within the bottom a part of fig. a pair of each the classifications offer higher answer to issues occurred for girls. By the utilization of application, the woman are often helped by broadcasting the

message once she got afraid by the unfavorable condition. the assistance are often in kind of kind like screaming the alarm, clicked image, giving electrical shock ready within the convenience.

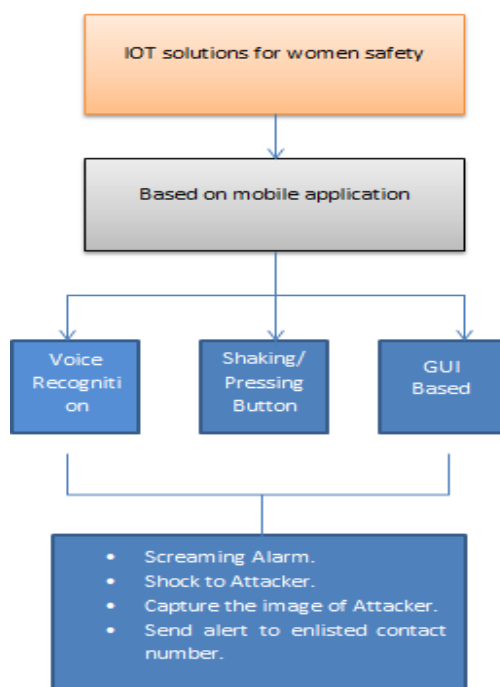


Fig. 2. Categorization of IoT solutions

F. Critical Analysis

The literature of five years has been reviewed based on the parameters as explained in further tables.

	tracking the location of the subject.		lock.	that may cause delay.
[9]	Proposed smart alarms app which will keep sending instant message and area to the chosen contacts.	GUI based	Initialize as a “widget”, and finger touch is enough to alert the receiver.	Developed only for Android based mobiles
[3]	Proposed an application for women that send risk notice to designated contacts.	GUI based	Risk notice can be sent in the near vicinity smart phones.	Will not work properly when GPS is disabled
[18]	Implemented a framework by utilizing radio and GSM/CDMA communication which sends the present location of the user to registered contacts.	Shaking/Pressing Button	Works in Circumstances where the cell phones are out of coverage.	Does not work if the user is out of transmission range.

Ref id	Objective	Technology used	Strength	Limitation
[15]	Development an app that sends location of the user after every five minutes interval until “stop” button is pressed by the user.	GUI based	The exact whereabouts of the device can be traced even with changing location	Doesn't have the facility to trace the location of nearest police stations and hospitals.
[11]	Designed a mobile app which send predefined message to the enlisted contact numbers	Shaking/Pressing Button	Working in the absence of internet connection	Developed only for Android based mobiles
[10]	Developed an app which is trained with voice keywords of the girl for	Voice Recognition	System gets activated even if mobile keypad is	Message is queued in non-availability of the network

CONCLUSION AND FUTURE SCOPE

From the above survey, we analyzed that pre-programmed smart software application devices can work efficiently in threat situations. In comparison, mobile applications designed for such awkward situations need knowledge of women, or pressing some code or button to send message to relatives. Nevertheless, awareness of smart software application devices is a crucial factor amongst public. As a time to come, a new device can be designed for the women who are using buses, railway or other transport for travelling where the female and driver has to give biometric impression while starting the trip and information of both help of GPS in case of unfortunate happening no matter the passenger has smart phone or not.

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