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A Survey on Smart Security Applications for Safety

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Abstract: ***Women's safety is very important and it is a major concern nowadays, Building an efficient, quick, and trustworthy method to provide women with a sense of empowerment and safety is the project's major goal. The app we developed will serve as a very helpful companion for women, ensuring that they'll never feel that they are in the middle of a crisis or difficult situation alone. This android application is a very user-friendly application that can be used by anyone who has installed the application on their respective smartphones. It is an android app for women's safety, yet it can also be used by men in emergencies. You can use the SOS key or a voice command to activate it. On activation, it sends a message comprising this location URL to the registered contacts and also calls on the first registered contact to help the one in dangerous situations. Due to a lack of sufficient evidence, many instances remain unsolved. In order to preserve evidence, we have preserved the audio recording option. Some of this system's most helpful features are offline mode, safe zone visualization, and continuous position tracking.***

Keywords: women security, android application, voice command, location tracking, offline, safe zone.

I. INTRODUCTION

While the government has taken many steps, the crime rate against women is not minimizing [3]. It is growing daily at a shocking rate. Eve teasing, harassment, molestation, rape, domestic violence, and abduction is becoming a part of everyday life

In today's world, people using smartphones have increased rapidly, and hence, a smartphone can be used efficiently for personal security or various other protection purposes. The heinous incident that outraged the entire nation has wakened us to go for the safety issues and so a host of new apps have been developed to provide security systems to women via their phones.

This Android Application for the Safety of Women and this app can be activated by using the volume or power button, whenever the need arises. Pressing the handset buttons identifies the location of the place through GPS and sends a message comprising this location URL to the registered contacts and also informs the registered contacts to help the one in dangerous situations.

II. LITERATURE SURVEY

An extensive Literature survey is carried out to get through insight in women's safety. The work out by various researchers is discussed as follows,

1) *Survey On Women Safety Devices*: (Ramya K1, Vimal T2) [1]: Today in the current global scenario, women feel less secure going outside. They are facing so many consequences in this independent world. Here, we are focusing on a scenario where a woman walking alone on the road faces harassment either from the front or backside during day or night time. To overcome these issues, we have developed a smart portable device that can track the victim's current location. When they feel insecure, their heartbeat increases which can be measured by the pulse sensor, and their stress level is monitored. The author has made an attempt to keep track of the victim's physical health in order to determine whether or not they are in distress. The proposed system was devised from the already-in-use smartwatches for women to track their health and safety. As a result, even when the victim loses consciousness, they can still be easily located.
2) *Design Of A Smart Safety Device For Women using IOT*: (Wasim Akram, Mohit Jain)[2]: The proposed women's safety equipment intends to give ladies total security in contemporary situations. In order to prevent false alarms from being raised and to guarantee that the alert is only triggered in emergency conditions, the user's fingerprint is utilized as a unique identification. The buzzer is incorporated into the design to guarantee complete security, alerting everyone around to the incident. Text messaging makes sure that the victim's close family members and the police are I nformed of his or her present whereabouts. If a lady feels the need for self-defense, she can utilize a shockwave generator to knock the attacker out for a while. In addition to the hardware-based design, android software is being created to offer further security functions including sending group chats, capturing audio, and pinpointing nearby secure spots on maps. In order to demonstrate the effectiveness of the smart gadget prototype for women's safety, the additional study must take performance indicators into account.

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3) *Analysis Of Women Safety In Indian Cities Using Machine Learning On Tweets*: (Deepak Kumar1, Shivani Aggarwal2)[3]: Various machine learning algorithms that can assist us in organizing and analyzing the massive amount of Twitter data acquired, which includes millions of tweets and text messages published every day. When it comes to evaluating vast amounts of data, these machine learning methods are particularly powerful and beneficial, including the SPC algorithm and linear algebraic Factor Model techniques, which help to further divide the data into relevant groupings. Support vector machines are yet another machine learning technique often used for collecting user information from Twitter and determining the state of women's safety in Indian cities. The author has attempted to apply machine learning in the proposed system to find hostile, violent, and abusive tweets directed at the victim.
4) *Survey On Women Safety Using IOT*: (B.Sindhu Bala1, M.Swetha2,M.Tamilarasi3 and D.Vinodha4)[4]: We discovered that GPS, GSM, and sensors can only track users' close whereabouts and send alarm SMS to a limited number of people. There is a buzzer in the present system that informs people when they are in danger, and the mobile app assures women's safety by using a buzzer system to send alert SMS, the user will share their position with their family members, and SOS service to send text messages. As a result, a new system that can transmit alarm signals automatically and without human interaction is required. Sensing more physical human body factors can increase the accuracy of diagnosing female sexual abuse.
5) *Street Safe [8]:* This application was created in honor of International Women's Day. It will mobilize the community to assist a woman in any situation and has three crisis features that may be activated by just clicking on the button. It immediately updates your Facebook account with the user's current location. SMS will be sent to selected associates in your area, and an alarm will sound loudly on your phone.

III. PROPOSED SYSTEM

This application would be both useful in an emergency and unique from other applications. Our system is developed in such a way that it will be unique from other existing apps by including all of their features. The user must register in order to use the program. Users can log in with their registered email and password. The user has to put three contact numbers manually. They will be registered with the Database.

Every time the user uses this application, she must start it by pressing the On/Off button. The app will then begin to function until the user turns it off.

When the user taps the SOS button or yells with the voice command or shakes the mobile, the app activates its emergency service and sends an alert message to the user's registered contacts with the user's name with the current position, and contacts to the nearest police station.

The location will be sent in every 5 minutes to the contacts so that if the person changes his/her place, they can know about it and reaches out for help [1]. There is also a live streaming system. When the user moves from one location to another, the registered contacts can track his/her movements.

There is an audio recording system. After receiving the SOS command, the system will begin recording the environment for the first 5 minutes so that the user can use it as proof later.

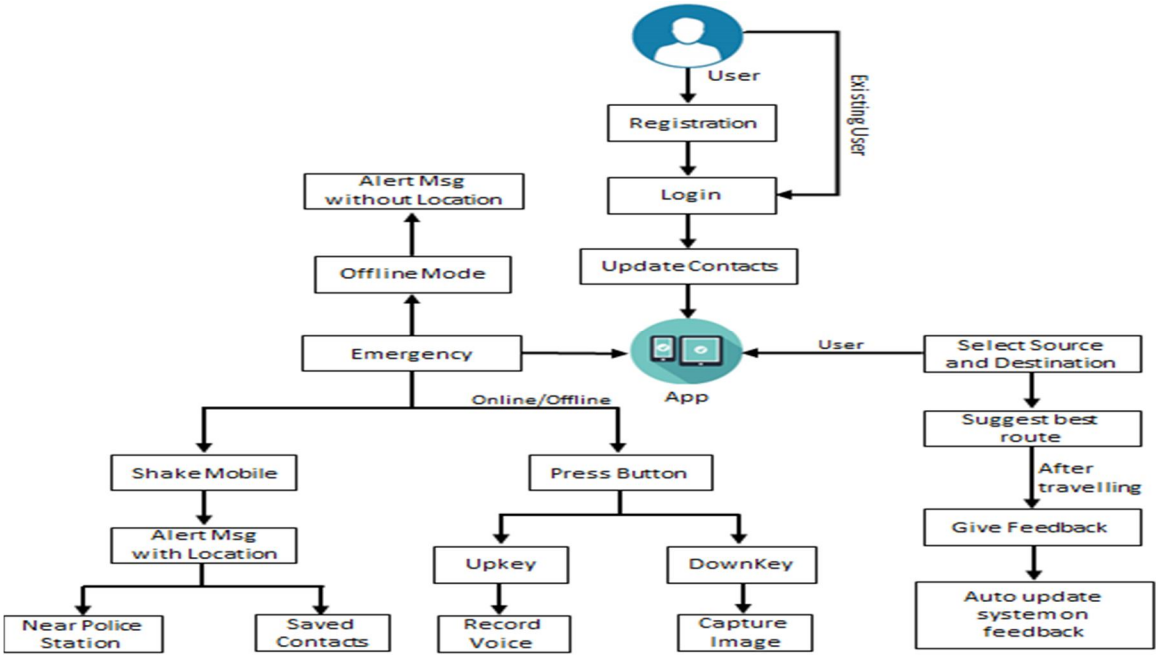
The safe zone feature allows users to view nearby police stations on a map.

Users may experience network troubles and be unable to utilize all of the capabilities in a distressing circumstance. Keeping this in mind, we have planned for Offline mode, in which the program can send an alert message but not locate the user, call the helpline number, and record audio. This function has been provided to minimize danger in any case so that the user can receive aid in any emergency.

Though the program cannot transmit the user's position using this capability, the user's family may be aware of her journey and can call out for assistance or at the very least be aware that the user is in danger.

Artificial Intelligence (AI) can collect data in a powerful way. It will recognize and interpret patterns. It is on the bases of the patterns, AI gives suggestions to the users, using its capability for their safety. Women safety apps use AI and Machine Learning capabilities to collect data and patterns over a time period. Later on, it provides the same data for other users with pre-generated reports, when they take a particular path to reach their destination.

IV. SYSTEM ARCHITECTURE



V. SUMMARY

In this portion, we are representing the main differences between the related existing systems and our proposed system in Table by which we can show up the reliability and uniqueness of our work [5,6,7,8].

Features	Raksha	Shake to Safety	Abhaya	Lifecraft	Proposed system
Alert message	Yes	Yes	Yes	Yes	Yes
Send location	Yes	No	Yes	Yes	Yes
Live GPS tracking	No	No	Yes	Yes	Yes
Safe Zone	No	No	No	Yes	Yes
Audio recording	No	No	No	Yes	Yes
Offline mode	Yes	No	No	Yes	Yes (with recording)
Voice command	No	No	No	Yes	Yes
Feedback System	No	No	No	No	Yes
Safest Path to reach the destination	No	No	No	No	Yes
Chatbot(For queries related to APP)	No	No	No	No	Yes

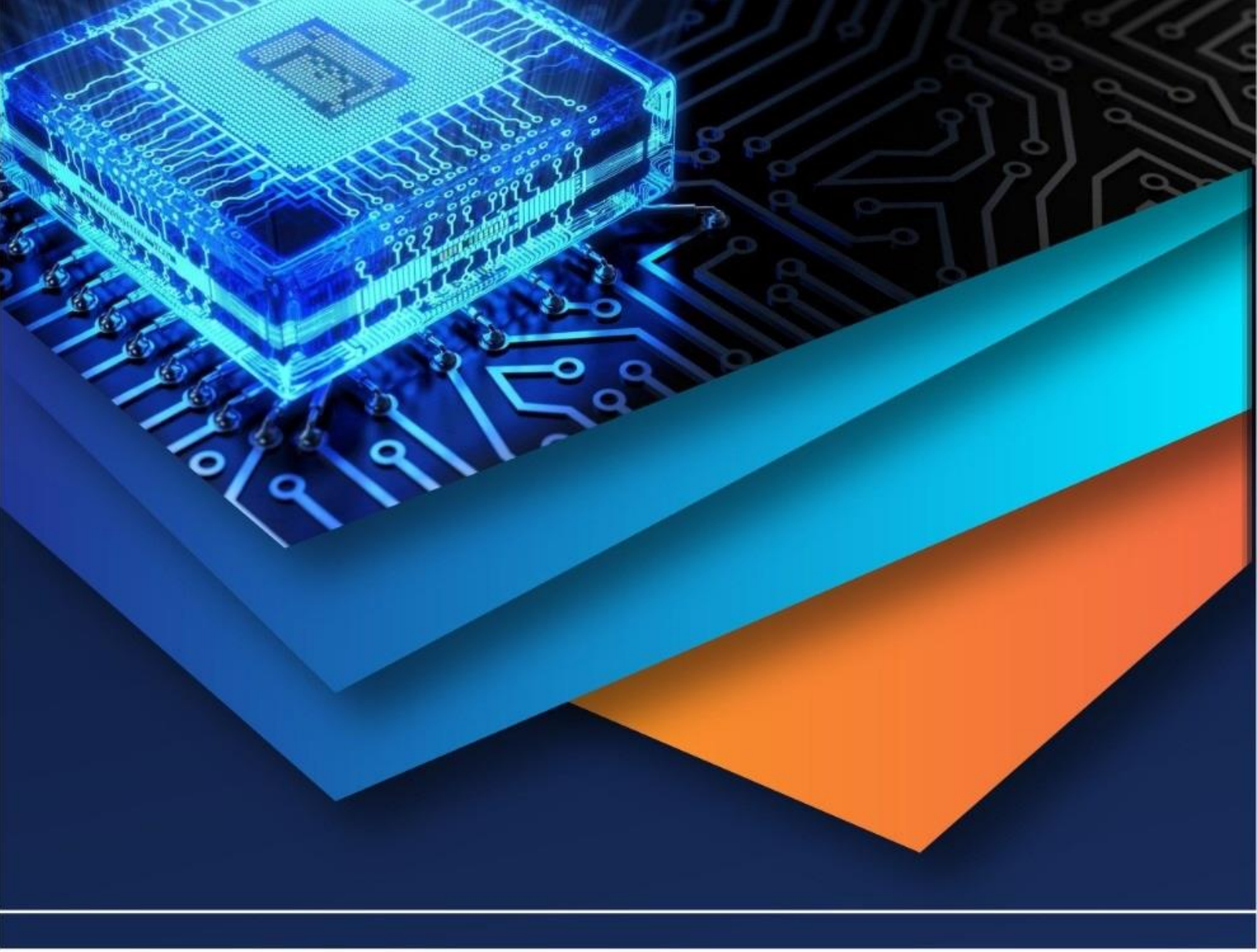
VI. CONCLUSION

This survey compares various ensemble approaches using the same basic classifier with diverse feature selection criteria They are not very precise, though. We have reviewed some ensemble approaches' benefits and drawbacks. The main requirements for an intelligent security system are examined in this study along with the obstacles of system development and technological demand. Since it is impossible to predict such an incidence, our suggested mobile application will be highly beneficial in reducing it. It won't just benefit women; it will also benefit kids because it uses voice commands, which are simple for young kids to use. We presented an Android app that guarantees the most secure path for ladies. The optimum travel path is offered to the user when the user enters the source and destination addresses, allowing data to be collected from the database. This enables the user to determine the optimal, safest path based on previously gathered user feedback. The Google map API is used to modify maps and contribute material to the map through a number of services that enable map integration.

As the technology is evolving, it might be possible to develop a new system that can automatically transmit alert signals without human interaction needs to be designed. Sensing more physical human body indicators might increase the accuracy degree of identifying the violation against victim.

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