A Comprehensive Literature Review on Women Security Model-Smart Location Tracking and Emergency Alert System

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ABSTRACT: Safety and Security is the most important thing in real and virtual technical world. Women security is also a most important for a successful country because True strength never lies between shielding women, but in breakage the environment that endanger them. We are trying to make an application that allows women to generate an security alert by saying a Code word by using Speech Recognitions API's. After getting the security alert message we use GPS tracking by which the real time location of women directly share by the application to the near by security regions like police stations or another security person or team there by which the security team reach there at proper time. We are using Firebase Cloud Messaging for real time instant message alerts. Train an AI model to recognize emergency keywords for better accuracy. We use Google Maps API's to find and notify nearby closest stations. The registered information of users helps maintaining communication between users and nearby security stations.

INTRODUCTION

Women Security is a growing concern worldwide web. Traditional safety measures often fail due to the lack of immediate response. This project aims to create a smart mobile-based security system that allows women to send an emergency alert simply by saying a "code-word". Women can generate the alert message without touching their phone by voice–activated emergency alert (Ravi Sekhar Yarraboth, Bramarambika Thota 2015). The app sends the real time location to the nearest security regions which helps them to reach at that place at exact time. The app sends real-time GPS coordinates to the nearest police and security stations. Automatically nearby police station and security regions detection by the application. With the help of location-based services to notify the closest help center. By using Instant notification Sends alerts via app by push notifications, SMS and email. It provides Data Security & Privacy ensures user data is encrypted and only shared with authorized personnel (Ramya Sree *et al*., 2016). The users registers their profile, including emergency contacts. In case of distress, the user says code-word. The app recognizes the voice command, activates location tracking, and sends alert. The nearest police/security station receives the alert and live locations. The authorities take immediate action to assist the person in distress. Speech recognition API's used for recognizing voice. By activating voice alert GPS Tracking sends real-time location data to nearby police/security stations. Google Maps API used to find and notify to the closest station to give real-time

information for immediate action to that alert. It helps to security stations to reach at the location timely and take immediate, effective and efficient action for the victim (Mohd Naved *et al*., 2022). This app also provides women security self-defense tutorial. The Self-defense tutorial helps in case of physical attacks. The app provides women with various features that can assist them in case of danger.

RELATED WORKS

Women's Security is growing concern worldwide as we know. With increasing incidents of harassment, assault, and violence reported daily. Also we see that how the crime rates increases day to day life not in case of women but in every person nobody is safe for providing better security feature to them we made this app.

Previous studies have highlighted the potential of mobile applications to improve women's safety through the usage of mobile application examined the use of mobile applications by women Pakistan to enhance their safety. The study found that women who used safety apps reported feeling more secure and had a greater sense of control over their safety. The study also highlighted the need for safety apps to be user – friendly, inituitive, and accessible to women with low literacy levels.

The authors explored the use of mobile applications to prevent sexual violence on college campus in the United States. It reduces the incidence of sexual harassment by providing information and resources for

the students. This app was easy to use app and easily providing information to students.

The author explored the use of safety apps by women in Saudi Arabia. This study tells that the women those use safety apps feel safe and secure and more easily to report incidents of harassment and violence. This study also tells about the need of safety apps to culturally sensitive and also to address the specifically safety concerns for the women in different places.

It highlighted the various features that have been developed to enhance the women's safety. The study identified common features such as alerts, GPS tracking, and safety tips. It examined the use of safety app in China that included an emergency alert feature. The study found that the app was effective in reducing the incidence of harassment and violence, by this user feels safe and more secure (Uma *et al.*, 2015).

It explored the use of GPS tracking in safety apps for women in India. This study defined that GPS Tracking was a valuable feature that helped women feel more secure and safe.

It examined the use of a safety app in Indonesia that included self – defense tutorials. It improves the women's knowledge of how to defense them in that situation and increase their confidence level by using them (Figen *et al.*, 2021).

Many studies highlight the importance of location-based security app. GPS technology enables real-time tracking, which helps the users to find out the nearest police station and security centers. This application automatically displays the emergency contact numbers and directions, it provides quick access to help (Abhilasha Singh *et al.*, 2023).

Comparative Study of Existing Research.

Device Name	Hardware Device	GPS	GSM	Buzzer	Features
Nirbhya	Yes	No	No	Yes	GPRS
Surkasha	Yes	No	Yes	No	Call recording
Himmat App	No	Yes	Yes	No	Video recording
Tear Gas Spray	No	No	No	No	Tear Gas Spray
Nirbheek	No	No	No	No	Gun
IPROB	No	Yes	Yes	No	App activates by shaking
SCIWARS	No	Yes	Yes	No	Receiver profile converted to general
Women Vehivcle Tracking	Yes	No	Yes	Yes	Require on switch per seat person
Safe Women	Yes	Yes	Yes	Yes	Emergency Contact calling device tracking creating SMS location services
FemSafe	Yes	Yes	Yes	Yes	Location Tracking, Emergency button, Geofencing, Camera Integration, Data Encryption, AI Powered Personal Safety assistant, Self Defense Tutorials, Secure Cloud Storage for evidence preservation

RESEARCH GAP

Many apps have to customize for diverse cultural background, social economics status, and disabilities. Research is needed to understand various safety challenges faced in different regions. There we need to research that how we implement these security app in the areas where less technology rate has. Safety needs vary in geographical areas. We have to explore that how to adapt apps to specific local crime areas. For improving accuracy many research introduced the features like voice stress analysis, behavioral analysis for reducing the false alarms is important. This is needed to develop more reliable location tracking areas with weak GPS signals. Developing robust offline capabilities is essential for areas with limited connectivity. This focused on creating offline emergency communication and location sharing features. By using optimization techniques we optimized the application that run in background or the constantly use feature such as GPS, is an important area.

FUTURE SCOPE

With the help of Internet of Things, we can integrate the street cameras and smart lighting system can enhance real time monitoring system. We can also enhance location tracking using advance GPS and other location technology. Improved communication and response by providing real time video streaming to emergency contact and authorities. Secure Cloud storage for evidence preservation. Automated Recording for audio and video during potential incidence.

CONCLUSIONS

The paper provides an investigation into the significant problems women currently face. In this research paper, we discuss about an android application for the safety of women. This application consist live location tracking, Emergency button, Geofencing, Camera Integration and many more things which are necessary for the security of women. If a women feels unsafe, the app has a alert button that immediately sends a notification to emergency contacts or the police. In this way, these application can help women in a safe environment and make them feel secure in society.

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