



A Review On Android-Based She Guard Safety Applications For Women's Security

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Abstract- Women safety has become a major concern in today's society due to the increasing number of harassment, assault, and emergency situations faced by women. With the rapid growth of smartphone technology, mobile applications can play an important role in providing immediate help and support during dangerous situations. This project presents a **Women Safety Application** designed to ensure the safety and security of women by using smart mobile technologies.

The proposed application provides features such as **one-tap emergency alert, real-time location tracking, SMS and call alerts to emergency contacts, and panic button activation.**

*Index Terms-*Emergency Response, Women's Safety, Mobile Application, GPS Tracking, Real-Time Location Sharing, Panic Alert System, Personal Security, Smart Safety System.

I. INTRODUCTION

Ensuring women's safety has become a major societal concern due to the increasing number of incidents related to harassment, abuse, and violence across the world. Despite the presence of legal protections and awareness initiatives, women continue to face unsafe situations in public and private spaces. One of the primary challenges in such circumstances is the inability to quickly communicate distress, share location details, or access immediate help. Therefore, the integration of technology-based solutions has become essential in providing timely assistance and enhancing personal security.

The widespread adoption of smartphones and advancements in mobile computing, location services, and communication technologies have enabled the development of safety-oriented mobile applications. However, many existing applications offer limited functionality or depend heavily on user interaction during emergencies, which may not always be feasible.

II. LITERATURE SURVEY

In recent years, multiple researchers have proposed various mobile-based solutions to address women's safety concerns, each contributing unique approaches to enhance effectiveness and accessibility. This section summarizes five key research works relevant to the development of safety applications.

In the paper "A mobile-based women safety application using GPS and message alerts" by Singh and Bansal (2017), the authors presented an Android application that uses GPS for real-time location tracking and SMS-based alerts to notify pre-registered emergency contacts during distress situations. The system emphasized immediate location sharing to reduce response time and demonstrated the importance of leveraging mobile networks for fast communication, even in

the absence of internet connectivity.

III. PROPOSED SYSTEM

1. Emergency SOS Feature

At the core of the system is the SOS alert mechanism. Upon activation, the application will instantly send a predefined emergency message along with the user's live GPS location to the listed emergency contacts via SMS, internet-based notifications, or both. This real-time location sharing ensures that help can reach the user as quickly as possible.

2. Voice Command and Shake Detection

To make the system more accessible in situations where physical interaction with the phone is difficult, voice command functionality using SpeechRecognizer API will be integrated. Users can simply speak a trigger phrase to activate the emergency alert. Additionally, the system will include shake detection, allowing users to activate SOS alerts by vigorously shaking the device, ensuring quick activation without unlocking the phone.

3. Fake Call Simulation

The system includes a fake caller feature that generates a simulated incoming call. This function allows users to create a distraction or excuse themselves from potentially dangerous situations without raising suspicion. Users can pre configure the caller's identity and ringtone to make the simulation appear authentic.

4. Help Alarm (Scream) Feature

The scream feature will generate a loud, attention-grabbing sound when activated. This loud alarm can potentially deter attackers, attract public attention, and serve as a psychological defense mechanism. It also acts as a secondary safety layer if the situation escalates before help arrives.

5. Safe Zone Notification

The proposed system introduces an automated **Safe Zone Notification Framework** designed to enhance user safety by providing real-time alerts when a user enters or exits predefined geographical boundaries

6. Auto Call to Police Station

To further enhance emergency responsiveness in women's safety scenarios, the proposed system incorporates an Automatic Police Calling Mechanism.

7. Real-Time Location Sharing ("Where Are You")

The application offers a "Where Are You" feature that allows users to share their current location proactively with trusted contacts. This feature can be used even when no immediate danger exists, providing peace of mind to both the user and their family members during travel or late-night outings.

8. Security and Privacy

The application will implement secure encryption protocols to protect user data and prevent unauthorized access. Only trusted emergency contacts will have access to the user's real-time location and other sensitive information, ensuring privacy while maintaining safety.

9. Easy Access Camera and Audio Module

The proposed system includes an **Easy Access Camera and Audio Module** designed to automatically record visual and audio evidence during emergency situations. This feature ensures that any attempt of harassment or threat is documented

10. Accessibility Features

To make the application widely usable, multilingual support and a highly simplified user interface will be incorporated.

11 Cloud Computing and Firebase

Cloud services such as Google Firebase are widely used for storing user data, managing emergency contact information, and synchronizing real-time alerts. Firebase enables reliable data storage, user authentication, and push notifications, while also ensuring scalability and secure data access for both users and developers.

IV. METHODOLOGY

The methodology of the She Guard Women Safety Application focuses on the design, development, and implementation of an integrated mobile-based safety system that provides real-time emergency assistance to women. The proposed system follows a modular and event-driven approach to ensure reliability, usability, and rapid response during critical situations.

The She Guard Women Safety Application is developed using a modular, event-driven approach to provide rapid and reliable emergency assistance. The system begins with user profile creation and emergency contact registration, ensuring quick access to trusted individuals during distress situations. Emergency activation can be triggered through multiple mechanisms, including a manual panic button, voice assistant commands, fake call simulation, and an emergency siren to attract nearby attention. Once activated, the application retrieves the user's real-time GPS location and automatically sends distress alerts along with location details, audio, and video recordings to registered contacts via SMS and WhatsApp.

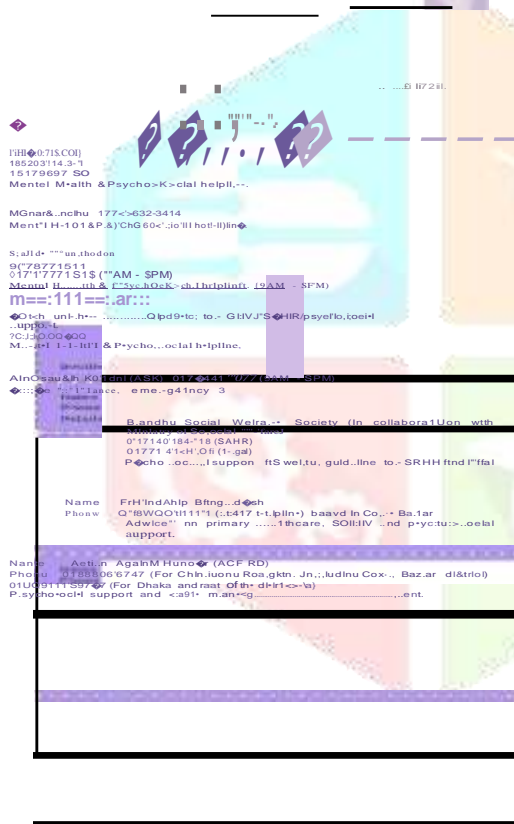
V. ARCHITECTURE



VI. RESULTS/ OUTPUTS

The Women Safety Application was successfully designed, developed, and tested to provide quick assistance during emergency situations. The system works effectively by integrating SOS alerts, GPS tracking, and communication services to ensure user safety.

The results clearly indicate that the proposed Women Safety Application is **effective, reliable, and practical**. It provides immediate help by sharing real-time location and alerts, thereby increasing the chances of timely assistance. The system meets its objectives and can be further enhanced by adding advanced features such as AI-based threat detection and wearable device integration.



Thursday, Dec 11 • 4:24 PM

.Q EMERGENCY! I need help.

' My Location: <https://www.google.com/maps?q=17.0701758.74.2441602>

Q EMERGENCY! I need help.

T My Location: <https://www.google.com/maps/?q=17.0701758.74.2441602>

◆ RCS chat with Dhanashri

.Q. Emergency Video: https://grreentrustfpo.com/SheGuard/uploads_11765450531_upload_video.mp4

Send SMS to SOS. Call or chat may apply.

Use Notification service to send SOS. Your contacts will be notified.

Call Emergency service 999. For police, fire, ambulance, etc.

Record Audio



VII. CONCLUSION

Women's safety remains a critical issue that requires immediate, reliable, and accessible solutions. The She Guard Women Safety Application addresses this challenge by integrating multiple emergency response features into a single, user-friendly mobile platform. The proposed system is designed to assist women in distress by enabling quick communication, real-time location sharing, and immediate access to nearby safety resources.

By incorporating features such as fake call simulation, emergency siren, and voice assistant-based activation, She Guard ensures both discreet and proactive safety mechanisms. The ability to send live location, audio, and video recordings through SMS and WhatsApp enhances the reliability of emergency communication and supports evidence collection for post-incident analysis.

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