



# Care-Ring: An Artificial Intelligence-Powered Safety and Protection System for Women

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## Abstract

The growing number of safety accidents and security concerns has made ensuring women's safety and protection a major priority in today's society. The development of intelligent systems that can promote women's safety and facilitate quicker emergency responses is made possible by technological breakthroughs. This article introduces Care-Ring, an intelligent web-based platform that uses artificial intelligence technology to improve women's safety and protection. Through an intuitive web interface, the system enables people to contact authorities, express safety concerns, and submit grievances. The Django framework, which uses Python for backend processing and HTML, CSS, and Bootstrap for the frontend interface, is employed in the development of the platform. SQLite is utilised for safe data storing. Authorities can effectively handle and monitor reported difficulties thanks to the system's user registration, complaint filing, and administrative monitoring modules. The suggested solution facilitates better user-administrator communication and aids in the more efficient handling of safety-related problems by offering a centralised safety management platform. Future advancements in real-time alert mechanisms, mobile integration, and sophisticated AI-based danger detection could further improve the Care-Ring system, which serves as an example of how intelligent digital platforms can help create a safer environment for women.

## Keywords

Women Safety, Artificial Intelligence, Smart Safety System, Emergency Assistance, Web-Based Monitoring, Django Framework, Complaint Management System, Digital Security Platform



## I. Introduction

Due to an increase in harassment, violence, and security-related occurrences, women's safety has become a prominent concern in many regions of the world. Even with the numerous safety precautions in place, many women still have trouble reporting dangerous circumstances or getting quick assistance. Conventional approaches to event reporting frequently involve inadequate monitoring systems, inadequate communication routes, and delays. Intelligent technical solutions that can offer prompt support, efficient monitoring, and dependable communication between users and authorities are therefore becoming more and more necessary. It is now feasible to create intelligent safety platforms that assist women in reporting safety concerns and getting prompt assistance thanks to the development of digital technologies and artificial intelligence.

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## II. Literature Review

Numerous technical solutions have been put out to enhance security and offer emergency assistance, and women's safety has grown in importance as a field of study. To assist women in dangerous circumstances, researchers have created a variety of mobile applications, IoT-based systems, and artificial intelligence-based platforms. Quick warnings, location monitoring, and communication with emergency contacts or authorities are the goals of these systems. Mobile-based women's safety apps that let users transmit location-based emergency warnings to pre-selected contacts have been the subject of numerous studies. In order to track the user's location and offer prompt assistance, these systems

typically employ GPS technology. While these applications are helpful in emergency scenarios, many of them lack adequate monitoring or complaint management systems and rely solely on alarm mechanisms.

IoT-based safety devices, such as wearable sensors and smart devices that may automatically broadcast distress signals during emergencies, have been the subject of several research projects. These devices have the ability to identify unusual circumstances and alert local authorities or family members. However, putting such systems into practice frequently calls for extra hardware, which might raise costs and make them less accessible.

Artificial intelligence-based safety monitoring systems that examine user data and identify questionable activity have also been the subject of recent research. By detecting possible hazards and producing alarms, these systems seek to offer intelligent support. Although AI-based methods exhibit encouraging outcomes, many current solutions lack an integrated platform for monitoring safety data, reporting complaints, and empowering authorities to take appropriate action.

It is clear from the examination of current systems that a centralised platform that integrates administrative management, monitoring, and complaint reporting is required. By offering a web-based platform where users can submit safety issues and administrators can effectively handle and monitor complaints, the proposed Care-Ring system overcomes these constraints. Through the use of cutting-edge online technologies and sophisticated monitoring features, this system seeks to enhance women's protection, increase communication, and provide better safety management.

## III. Problem Statement

Even though several women's safety applications and monitoring systems have been developed, many of the current solutions still have a number of drawbacks. The majority of safety applications don't offer a complete platform for reporting events, monitoring complaints, and handling safety-related concerns; instead, they mostly concentrate on issuing emergency warnings or exchanging location data. Because there is no organised method of communication between users and authorities, many problems are unreported or are not effectively handled. Furthermore, the manual and time-consuming nature of traditional complaint procedures might cause delays in responding to urgent circumstances. Additionally, many platforms lack centralised data management, which makes it challenging for authorities

to efficiently monitor and evaluate safety-related incidents.

These difficulties underscore the need for an intelligent and user-friendly platform that makes it simple for women to submit safety issues and gives administrators the ability to promptly monitor and address complaints. As a result, a clever and dependable system that incorporates digital complaint management, monitoring features, and effective user-administrator communication is required. By offering a web-based safety platform where users can file complaints and administrators may handle and keep an eye on reported issues via a centralised interface, the proposed Care-Ring system tackles these difficulties. By utilising contemporary web technologies to improve accessibility, communication, and response management, this system seeks to improve women's safety.

#### IV. Proposed System

These challenges highlight the need for an intelligent and user-friendly platform that makes it easy for women to report safety concerns and enables administrators to quickly track and resolve complaints. Therefore, an intelligent and reliable system that includes monitoring tools, digital complaint management, and efficient user-administrator communication is needed. The proposed Care-Ring system addresses these challenges by providing a web-based safety platform where users can post complaints and administrators may handle and monitor reported issues via a centralised interface. This system aims to increase women's safety by leveraging modern web technologies to enhance accessibility, communication, and reaction management.

Users can navigate via options like Home, Emergency Services, Emergency Contacts, and Logout on the Women Safety Management System homepage using the interface seen in the figure. The user's latitude and longitude coordinates, which are obtained using location detection characteristics, are also shown by the system. The user can obtain their current location by clicking the Get Location button, and for safety reasons, the system can share the user's location with pre-designated emergency contacts by choosing Send Location. The Django framework and Python are used to construct the system's backend, which manages administrative monitoring, complaint submission, and user authentication. HTML, CSS, and Bootstrap are used in the frontend interface's construction to provide a responsive and engaging user experience.

#### V. User Interface Module



Figure 1: User Dashboard of the Women Safety Management System

The Care-Ring Women Safety Management System's primary dashboard interface is shown in Figure 1 following a user's successful login. With menu options including Home, Emergency Services, Emergency Contacts, and Logout, the design makes navigation simple. Additionally, the dashboard shows the user's current latitude and longitude, which were determined by the location detection function of the system. The user can retrieve their current position using the "Get Location" button on the interface, and they can share this information with registered emergency contacts by using the "Send Location" button. By notifying reliable contacts of the user's present position, this function aids in providing prompt assistance in emergency situations.



Figure 2: Location Sharing Interface for Emergency Assistance

The Care-Ring system's location tracking and sharing features are depicted in Figure 2. In an emergency, this module enables users to get their current position and send it to emergency contacts. To guarantee precise position identification, the system records the latitude and longitude values and shows them on the interface. When a user clicks the Send Location button, the system notifies the registered emergency contacts of their location, allowing them to react promptly and offer aid as needed. By guaranteeing real-time communication and quicker emergency response, this feature improves the efficacy of the women's safety system.



## VI. Experimental Results

The performance, usability, and usefulness of the created platform were examined through an experimental evaluation of the suggested Care-Ring Women Safety Management System. Python was utilised to develop the system, and the Django framework was used for backend processing. The frontend interface was designed using HTML, CSS, and Bootstrap. SQLite was used as the database to store user data, complaints, and emergency contact information when the program was implemented on a local server environment. In order to confirm the correct operation of many modules, including user registration, login authentication, emergency contact management, location detection, and location sharing functions, the system was tested with numerous user interactions.

The Get position button, which recorded precise latitude and longitude coordinates, allowed users to correctly access their current position during testing. The efficacy of the emergency aid functionality was demonstrated via the Send Location feature, which enabled the system to send the user's location data to pre-established emergency contacts.

To make sure that users could file safety-related concerns via the system interface, the complaint management module was also assessed. The administrator could effectively monitor and handle reported concerns by accessing these complaints using the admin panel, which was kept in the database. The findings show that the system effectively facilitates safe data storage, real-time user engagement, and efficient user-administrator communication.

## VII. Conclusion

The Care-Ring Women Safety Management System uses contemporary web technology to enhance women's safety. In an emergency, the system enables users to communicate their current position, manage emergency contacts, and file grievances. It gives administrators a centralised platform to effectively monitor and handle safety-related issues. Reliable system speed and safe data management are guaranteed by the implementation's use of Python, Django, HTML, CSS, and SQLite. The technology effectively facilitates communication between users and authorities, according to the trial results. Mobile apps, real-time notifications, and sophisticated AI-based safety features could be added to the platform in the future.

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