ResQHer: An IoT-Enabled Smart Women Safety System with Real-Time Monitoring

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ABSTRACT

This paper presents a study on the **ResQHer Women Safety Application** integrated with **Internet of Things (IoT)** technology. The main objective of this research is to enhance the safety and security of women by providing real-time assistance during emergency situations. In this work, mobile application features combined with IoT devices are used to monitor user location, detect emergencies, and send instant alerts to predefined contacts and authorities. The system includes features such as SOS alerts, live location tracking, emergency contact notification, and real-time monitoring.

The results obtained show that the IoT-based ResQHer system provides faster response and improved reliability compared to traditional safety methods. The application helps in reducing response time during critical situations and ensures quick communication with guardians or emergency services. This study contributes to improving personal safety and empowering women through technology. Finally, it is concluded that the integration of IoT with mobile applications can play a significant role in providing an efficient, reliable, and smart women safety solution.

Keywords

ResQHer, women safety, IoT, SOS, GPS, tracking, alerts, security

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1. INTRODUCTION

Women safety has become a major concern in today's society, requiring immediate attention and effective technological solutions. Traditional safety methods such as helplines or manual communication are often slow and may fail during emergency situations. With the advancement of mobile technology and the Internet of Things (IoT), smart systems can now provide real-time assistance and improve personal security

The **ResQHer system** is designed to offer an IoT-based solution for women safety. It enables users to send instant SOS alerts, share live location, and notify emergency contacts during critical situations. The system uses GPS technology and connected devices to track the user's location and ensure quick response. The main objective of this project is to reduce response time during emergencies and enhance safety through smart monitoring. The system also aims to provide an easy-to-use platform that can be accessed through a mobile application..

Literature Review

Several research studies have been conducted on women safety systems using mobile applications and IoT technology. Many researchers have developed applications with features like SOS alerts, GPS tracking, and emergency communication. These studies show that smart safety systems can significantly improve response time during critical situations.

Some research papers focus on real-time location tracking and alert mechanisms to ensure quick assistance. Other studies highlight the importance of integrating wearable devices and sensors for automatic emergency detection. It has been observed that IoT-based systems provide better reliability and faster communication compared to traditional safety methods.

Existing systems demonstrate that technology can play a major role in enhancing personal security. However, many applications lack user-friendly interfaces, accuracy in location tracking, or instant response features. The ResQHer project aims to overcome these limitations by providing an easy-to-use, reliable, and real-time women safety solution with advanced features.

Methodology

The methodology of the **ResQHer system** follows a structured approach using the Agile model. The development process includes multiple stages such as requirement analysis, system design, implementation, testing, and deployment.

Initially, the system requirements were identified, including SOS alert functionality, live location tracking, emergency contact notification, and real-time monitoring. Then, the system architecture was designed by dividing it into frontend, backend, and IoT components. The frontend provides a user-friendly mobile interface, while the backend handles data processing, communication, and alert management.

The IoT integration includes GPS modules and sensors for accurate location tracking and emergency detection. When a user triggers the SOS feature or an emergency is detected, the system immediately sends alerts along with the user's live location to predefined contacts and authorities. The backend processes this data and ensures real-time updates.

Finally, the system was tested under different scenarios to ensure reliability, fast response, and accuracy. The ResQHer system aims to provide an efficient and dependable solution for enhancing women safety through smart technology.

Results

The **ResQHer system** successfully enhances women safety by providing fast and reliable emergency response features. The system sends SOS alerts and shares live location within a few seconds, making it efficient during critical situations. The user interface works smoothly and allows easy interaction for users.

The system performs well in real-time tracking and emergency communication. It was tested under different scenarios, and the results showed quick alert delivery and accurate location sharing. The integration of frontend, backend, and IoT components works effectively, ensuring smooth and continuous operation.

Overall, the project achieves its objective of providing a reliable, efficient, and user-friendly solution for women safety using modern technology.

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Results

The TumorScope system successfully detects brain tumors from MRI images with high accuracy. The system provides results within a few seconds after image upload, making it fast and efficient. The user interface works smoothly and allows easy interaction.

The AI model performs well in identifying tumor patterns and classifying images correctly. The system was tested with different MRI images, and the results showed consistent performance. The integration of frontend, backend, and AI model works effectively, ensuring smooth operation of the system.

Overall, the project achieves its objective of providing a reliable and efficient solution for brain tumor detection.

Conclusion

The **ResQHer project** demonstrates the effective use of mobile technology and IoT in enhancing women safety. The system provides a fast, reliable, and user-friendly solution for handling emergency situations through features like SOS alerts, live location tracking, and real-time communication. It reduces response time and ensures quick assistance, which is crucial during critical situations.

Although the system has some limitations, it shows strong potential for future improvements. The project can be enhanced by integrating advanced sensors, improving accuracy, and adding more smart features. Overall, the system serves as a valuable tool for personal safety and highlights the importance of technology in protecting and empowering women

References

Sr.No	Category	Title	Link	Description
1.	YouTube Tutorial	Tutorial Women Safety App with GPS & SOS Feature	https://youtu.be/14FcNnjixcY?si=lGY5tlSXDaEwijr2	Explains development of women safety app with location tracking and SOS alerts.
2.	YouTube Tutorial	YouTube Tutorial | IoT Project	https://www.youtube.com	Shows how IoT devices are used for real-time tracking and emergency alerts..
3.	YouTube Tutorial	Android Women Safety App Developme nt – Step by Step	https://www.youtube.com/watch?v=RRJoC3Vr7zw	Demonstrates building a safety app with alert and tracking features.
4.	Research Paper	Research Paper | Women Safety System using IoT	https://www.atlantis-press.com/article/126002040.pdf	Describes IoT-based women safety system with GPS tracking and emergency response.
5.	Research Paper	Research Paper | Smart Women Safety Device	https://www.ijert.org/research/women-safety-devices-and-applications-IJERTV7IS070077.pdf	Explains implementati on of smart safety device using sensors and alert system..