

# Women Safety Cab Booking with Exact Location Alert on Mischievous Tracking

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**Abstract:** *This study focuses on evaluating the state of women's safety in public transportation and highlights the growing demand for a dedicated taxi service exclusively for women. Night-time travel, in particular, poses significant safety concerns, with numerous reported incidents involving cab drivers. To address this, an Android-based application has been developed to enhance security for women booking cabs during late hours. The system incorporates trajectory tracking technology to monitor deviations from the intended route and detect excessive travel time. If any unusual travel behavior is identified—such as route deviation or delayed arrival—an immediate alert, including the driver's location, is sent via SMS to nearby police authorities and the passenger's family members. This proactive approach ensures swift action can be taken to safeguard the passenger before any potential harm occurs.*

**Keywords:** Women Safety, Public Transportation, Night Travel, Cab Booking, Android Application, Trajectory Tracking, Route Deviation Detection, Emergency SMS Alerts, GPS Monitoring.

## I. INTRODUCTION

The rapid expansion of urban transportation services has undoubtedly improved convenience, but it has also introduced new safety challenges—particularly for women. While conventional cab services offer accessibility, they often lack dedicated safety features tailored to women's unique concerns, especially during late-night commutes. Publicized cases of misconduct involving drivers have highlighted critical gaps in ensuring secure travel experiences.

To bridge this safety gap, there is a growing necessity for transportation solutions that not only provide reliable service but also actively prevent potential threats. A technology-driven approach, combining location tracking with automated alert mechanisms, offers a promising pathway toward this goal. This study explores the development of an Android-based platform that enables safe, real-time-monitored cab bookings for women, ensuring both accountability from service providers and peace of mind for passengers.

## II. LITERATURE REVIEW

Over the years, various research efforts have been made to enhance women's safety through technological innovations. In 2020, Amar Nath, Ankit Khandelwal and Akul Kanojia proposed the design and implementation of an intelligent cab service system using a multi-agent framework with the Java Agent Development Framework (JADE). While this decentralized approach addressed limitations of traditional centralized systems, it did not adequately ensure user security. In 2022, Ashok K, B Rajalakshmi and Konapalli Sai Chaitanya Reddy conducted a review on women's safety in India using machine learning and GPS systems across social media platforms. Although insightful, the solution primarily focused on digital surveillance rather than providing protection in physical public spaces.

In 2023, Aparna S. Mete, Shreyash Deshmukh and Dhanashree Dewalkar developed a multiservice Android-based cab booking application to integrate various transport services. However, the system followed a one-dimensional model and lacked built-in security features. That same year, M. Hareni, Abishaya S, P kavya and K Rajasekar introduced a smart shoe embedded with emergency alert functionality using advanced sensors and communication technologies. Although effective in certain hazardous environments, the system was compromised when battery levels were low, causing automatic deactivation. Also in 2023, Muhammad Shoaib Farooq, Ayesha Masooma, Uzma Omer and Rabia Tehseen presented a systematic literature review on the role of IoT in women's safety. While highlighting the GPS-based alert



systems' potential, the study pointed out the impracticality of requiring women to carry dedicated IoT devices at all times. These works collectively underline the limitations of prior approaches and emphasize the need for a more reliable, automated, and real-time safety system tailored specifically for women in public transport.

### **III. PROBLEM IDENTIFICATION**

The current scenario highlights the pressing need for a transportation system that prioritizes women's safety. Despite the availability of various systems, none have been able to fully address the security concerns faced by women travelers. The lack of a comprehensive solution leaves women vulnerable to risks during their commutes, hindering their ability to travel safely and confidently. Therefore, there is a critical need to develop a robust security system that not only tracks the location of passengers but also ensures their safety and security throughout their journey in public cabs.

### **IV. PROPOSED SYSTEM**

The proposed system introduces a women's safety cab booking application for Android. It utilizes GPS technology to enable real-time location sharing and driver detail verification for enhanced security. The system includes three key safety features are Destination Not Reached (Alerts if the cab does not reach the specified location.) ,Wrong Route Detection (Notifies if the driver deviates from the planned route.) and Time Exceeded Alert ( Sends an alert if the ride duration surpasses the expected time.)If any issue arises, alerts are automatically sent via SMS to nearby patrol teams and the passenger's emergency contacts. Only verified cab drivers are included in the system, ensuring safe and secure travel for women.

### **V. ADVANTAGES**

#### **5.1. Safe Night-Time Cab Bookings for Women**

The application is specially designed to provide a secure cab booking experience for women during night hours. This ensures women can travel confidently without fearing for their safety, especially in low-visibility or high-risk areas.

#### **5.2. Smart and Secure Travel with Real-Time Monitoring**

The system tracks the cab's location, speed, and route in real-time. Authorized users can monitor this data to ensure the ride stays safe.

#### **5.3. Route Deviation Detection and Alerts**

If the cab deviates from the designated route, the system automatically detects it and sends alerts to the user and their emergency contacts. This immediate notification helps in identifying potentially unsafe situations early.

#### **5.4. Verified Cab Drivers for Trust and Safety**

Only drivers who have undergone a verification process (e.g., background checks, police clearance) are allowed to register and operate in the app. This adds a layer of trust and accountability, ensuring that users are in safe hands.

#### **5.5.Quick Emergency Response with Patrol Team Alerts**

In case of an emergency, the system can automatically alert the nearest police patrol teams or security personnel. This feature significantly reduces the time it takes for help to arrive during a critical situation.

#### **5.6. Automated Safety Alerts without Manual SOS**

The system can trigger safety alerts based on AI-based behavior analysis or route deviation, even if the user is unable to press the SOS button. This ensures protection in scenarios where the user may be unconscious or unable to act.

#### **5.7. User-Friendly Interface for Easy Use**

The app interface is designed to be intuitive and straightforward, enabling users to book cabs, track trips, and access emergency services quickly—even in moments of panic or confusion.

#### **5.8. Secure Management of Personal Data**

All user data, including personal details, location history, and emergency contacts, are stored securely within the app. Strong encryption and privacy policies ensure that data is protected from unauthorized access



## **VI. CONCLUSION**

The **Women Safety Cab Booking System** is a robust and user-friendly application designed to ensure the safe travel of women, especially during night-time. By integrating features such as GPS-based route tracking, verified driver registration, emergency alert notifications, and secure data handling, the system addresses key safety concerns without relying on artificial intelligence. Its automated alert mechanisms, real-time monitoring, and easy-to-use interface make it an effective tool for promoting women's safety and empowering independent travel. This project highlights how practical, rule-based systems can make a meaningful difference in real-world safety scenarios.

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