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Women Safety Analytics – Protecting Women from safety threats

Abstract

Women Safety Analytics is a cutting-edge, AI-powered solution that leverages real-time monitoring to detect and prevent potential threats to women's safety. By incorporating computer vision, deep learning, and gesture recognition technologies, this software continuously analyses environments to detect suspicious or unsafe situations, particularly for women. It employs a combination of person detection, gender classification, anomaly detection, and predictive analytics to identify potential threats and trigger timely alerts.

The system will monitor public spaces, streets, and other critical areas to count the number of men and women present, providing insights into gender distribution patterns at specific times and locations. It is designed to identify risky situations such as a lone woman at night, a woman surrounded by men, or unusual gestures indicating distress. By offering real-time data and early alerts, Women Safety Analytics empowers law enforcement to respond swiftly and prevent potential incidents before they escalate.

Existing systems for women's safety include CCTV surveillance, mobile safety apps, AI-powered anomaly detection, and public safety hotlines. CCTV and AI systems often provide reactive monitoring, requiring manual intervention, while mobile apps and hotlines depend on victims actively requesting help, which may not always be possible. These solutions lack specific focus on detecting threats to women, relying more on generic anomaly detection or post-incident response.

Our proposal, focuses on proactive real-time threat detection using AI-powered surveillance and advanced analytics specifically designed for women's safety. By leveraging computer vision, deep learning, and gesture recognition, the system continuously monitors public spaces to detect individuals and classify gender. It provides insights into gender distribution and identifies potentially unsafe situations, such as a lone woman at night or a woman surrounded by men. The software also recognizes distress gestures (SOS) and triggers alerts without requiring manual input, allowing for faster law enforcement response. In addition, it uses data to identify safety hotspots, enabling strategic planning to prevent future incidents. This approach ensures proactive intervention before incidents escalate, addressing gaps in existing systems. Women safety analytics should include the following functionalities 1. Person detection along with Gender Classification 2. Gender Distribution : Count the number of men and women present in the scene 3. Identifying a Lone Woman at Night time 4. Detection of a Woman Surrounded by Men 5. Recognizing SOS situation through gesture analytics 6. Identifying hotspots where incidents are more likely to occur, based on the past alerts.

Signature of Guide

Signature of Project Co-ordinator