

<p align="center">FORM 2</p> <p align="center">THE PATENTS ACT 1970</p> <p align="center">39 OF 1970</p> <p align="center">&</p> <p align="center">THE PATENT RULES 2003</p> <p align="center">COMPLETE SPECIFICATION</p> <p align="center">(SEE SECTIONS 10 & RULE 13)</p>		
<p>1. TITLE OF THE INVENTION</p> <p>Women Safety Analytics – Protecting Women from Safety Threats</p>		
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2. PREAMBLE TO THE DESCRIPTION

COMPLETE SPECIFICATION

The following specification particularly describes the invention and the manner in which it is to be performed

Women Safety Analytics – Protecting Women from Safety Threats

Women's safety has become a significant concern globally. While various devices and systems have been introduced to provide safety measures, there remains a gap in real-time threat analysis, predictive alerts, and actionable insights. Existing solutions often fail to integrate advanced analytics, real-time monitoring, and proactive intervention mechanisms. This invention addresses these gaps by introducing a comprehensive system that leverages artificial intelligence (AI), machine learning (ML), Internet of Things (IoT), and data analytics to enhance women's safety.

BACKGROUND

[0001] Background description includes information that may be useful in understanding the present invention. It is not an admission that any of the information provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.

[0002] Women's safety is a pressing issue worldwide, with incidents of harassment, violence, and unsafe conditions remaining alarmingly common. Despite advancements in technology, existing safety tools lack comprehensive features to prevent or mitigate threats effectively. Wearable devices and panic alarms provide some assistance but often fail to offer real-time monitoring and data-driven insights.

[0003] Urban environments, particularly public spaces and transit systems, present significant safety risks due to overcrowding and the absence of immediate intervention mechanisms. Similarly, rural areas suffer from delayed emergency responses, making it essential to implement a system that works across different geographies.

[0004] Another challenge lies in accurately identifying threats, as many existing solutions rely solely on manual alerts, overlooking contextual and biometric indicators of distress. For instance, sudden changes in heart rate or abnormal movements can signal danger but are often ignored in traditional safety tools.

[0005] Furthermore, the lack of predictive analytics limits users' ability to avoid high-risk areas or situations. Women require a system that not only reacts to threats but also helps them proactively navigate safer environments.

[0006] All publications herein are incorporated by reference to the same extent as if each individual publication or patent application were specifically and individually indicated to be incorporated by reference. Where a definition or use of a term in an incorporated reference is inconsistent or contrary to the definition of that term provided herein, the definition of that term provided herein applies and the definition of that term in the reference does not apply.

[0007] As used in the description herein and throughout the claims that follow, the meaning of “a,” “an,” and “the” includes plural reference unless the context clearly dictates otherwise. Also, as used in the description herein, the meaning of “in” includes “in” and “on” unless the context clearly dictates otherwise.

OBJECTS OF THE INVENTION

[0008] It is an object of the present disclosure to provide a comprehensive safety solution that combines wearable technology, mobile applications, and cloud-based analytics for real-time threat detection.

[0009] It is an object of the present disclosure to enable predictive analytics that identifies high-risk areas and suggests safer routes for users.

[0010] It is an object of the present disclosure to ensure rapid emergency response through automated alerts to authorities and pre-selected contacts.

[0011] It is an object of the present disclosure to empower users with an SOS feature and real-time geolocation tracking for immediate assistance.

[0012] It is an object of the present disclosure to offer a scalable, user-friendly, and adaptable system suitable for diverse environments, including urban and rural settings.

SUMMARY

[0001] The present invention presents women safety analytics – protecting women from safety threats.

[0002] The Women Safety Analytics system offers an integrated approach to addressing women's safety by leveraging wearable technology, AI-powered analytics, and IoT-enabled devices. The wearable device monitors physiological parameters such as heart rate and stress levels while also analyzing environmental factors like noise and motion. Data is transmitted to a mobile application and processed on a cloud-based platform using machine learning algorithms. This

allows for real-time detection of distress signals and the generation of predictive insights, ensuring both immediate and long-term safety measures.

[0003] The system also features emergency communication capabilities, including automated alerts to contacts and authorities with the user's geolocation. The predictive analytics function identifies potential safety risks in specific areas, enabling women to make informed decisions. Together, these components create a robust and efficient safety mechanism that adapts to individual and community needs.

[0004] One should appreciate that although the present disclosure has been explained with respect to a defined set of functional modules, any other module or set of modules can be added/deleted/modified/combined and any such changes in architecture/construction of the proposed method are completely within the scope of the present disclosure. Each module can also be fragmented into one or more functional sub-modules, all of which also completely within the scope of the present disclosure.

[0005] Various objects, features, aspects and advantages of the inventive subject matter will become more apparent from the following detailed description of preferred embodiments, along with the accompanying drawing figures in which like numerals represent like components.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] The accompanying drawings are included to provide a further understanding of the present disclosure, and are incorporated in and constitute a part of this specification. The drawings illustrate exemplary embodiments of the

present disclosure and, together with the description, serve to explain the analysis of the present disclosure.

[0014] Figure 1: Women Safety Analytics: Protecting Women from Safety Threats.

DETAILED DESCRIPTION

[0015] In the following description, numerous specific details are set forth in order to provide a thorough understanding of embodiments of the present invention. It will be apparent to one skilled in the art that embodiments of the present invention may be practiced without some of these specific details.

[0016] If the specification states a component or feature “may”, “can”, “could”, or “might” be included or have a characteristic, that particular component or feature is not required to be included or have the characteristic.

[0017] Exemplary embodiments will now be described more fully hereinafter with reference to the drawings, in which exemplary embodiments are shown. This disclosure, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein. These embodiments are provided so that this disclosure will be thorough and complete and will fully convey the scope of the invention to those of ordinary skill in the art. Moreover, all statements herein reciting embodiments of the invention, as well as specific examples thereof, are intended to encompass both structural and functional equivalents thereof. Additionally, it is intended that such equivalents include both currently known equivalents as well as equivalents developed in the future (i.e., any elements developed that perform the same function, regardless of structure.

[0018] various terms as used herein are shown below. To the extent a term used in a claim is not defined below, it should be given the broadest definition

persons in the pertinent art have given that term as reflected in printed publications and issued patents at the time of filing.

[0019] Women Safety Analytics system comprises three primary components: a wearable device, a mobile application, and a cloud-based analytics platform. The wearable device, designed as a compact accessory, integrates sensors to monitor physiological metrics like heart rate variability and stress levels. Environmental sensors detect anomalies such as sudden noise spikes or irregular motion, while an SOS button allows users to manually signal distress.

[0020] The mobile application acts as the user interface, enabling real-time geolocation tracking, incident reporting, and management of emergency contacts. It also provides alerts and recommendations based on analyzed data. The application ensures seamless communication between the wearable device and the analytics platform, facilitating rapid response during emergencies.

[0021] The cloud-based analytics platform processes incoming data from the wearable device and mobile application using advanced machine learning algorithms. By identifying patterns indicative of danger, the platform triggers alerts and generates predictive insights. Historical and real-time data integration ensures accurate risk assessments, while predictive analytics suggest safer routes and identify high-risk areas.

[0022] The system's scalability and adaptability make it suitable for diverse settings, including urban public transport, educational institutions, and remote rural areas. Its design emphasizes user convenience, reliability, and quick action, ensuring a holistic approach to women's safety.

I/We Claim

Claim 1: A women's safety analytics system comprising:

- A wearable device with physiological and environmental sensors;
- A mobile application for real-time monitoring and alerts; and
- A cloud-based analytics platform for processing and analyzing data to predict and detect safety threats.

Claim 2: The system of claim 1, wherein the wearable device includes an SOS button for manual distress signals.

Claim 3: The system of claim 1, wherein the mobile application provides real-time geolocation tracking and emergency contact notifications.

Claim 4: The system of claim 1, wherein the analytics platform employs machine learning algorithms to detect patterns indicative of distress or unsafe conditions.

Claim 5: The system of claim 1, wherein the platform provides predictive insights on safety hotspots based on historical and real-time data.

Claim 6: The system of claim 1, wherein the wearable device integrates motion sensors to detect abnormal movements, such as a fall or struggle.

Claim 7: The system of claim 1, wherein the analytics platform integrates with emergency response services for automatic reporting and communication.

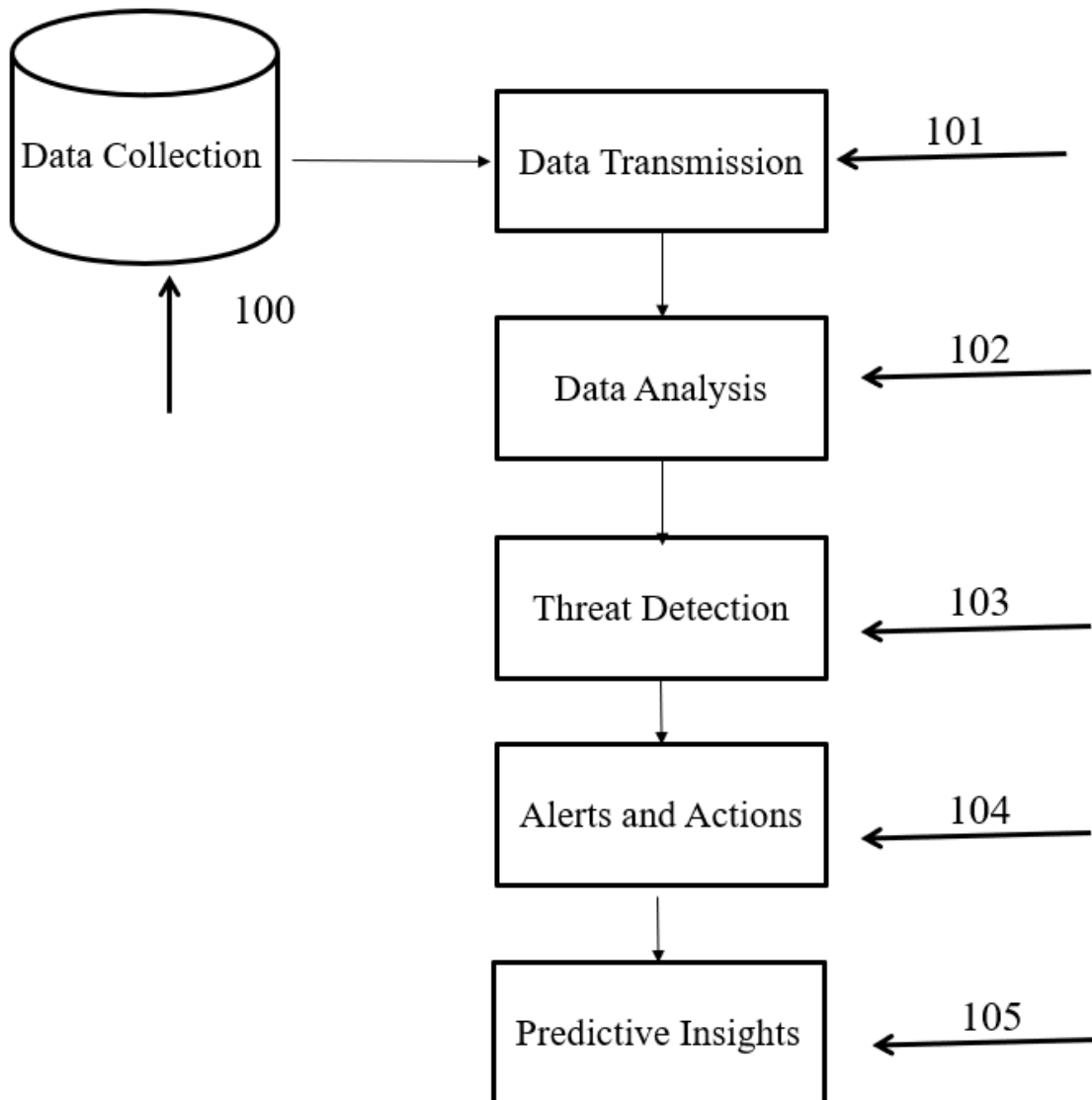
ABSTRACT

Women Safety Analytics – Protecting Women from Safety Threats

Women's safety is a critical global concern requiring innovative and reliable solutions. The Women Safety Analytics system addresses this issue by integrating advanced technologies to proactively predict, detect, and mitigate safety threats. This comprehensive system combines wearable devices, mobile applications, and a cloud-based analytics platform to monitor physiological, environmental, and location data in real time. The wearable device is equipped with sensors that track biometric parameters such as heart rate and stress levels, alongside environmental conditions like noise and motion. This data is processed by machine learning algorithms to identify distress signals or unsafe situations accurately.

The system provides real-time alerts to pre-registered emergency contacts and authorities when a threat is detected, ensuring rapid response. A dedicated SOS button on the wearable allows users to manually signal emergencies, while the mobile application offers a user-friendly interface for live tracking, safety recommendations, and incident reporting. Additionally, the cloud-based analytics platform generates predictive insights by analyzing historical data, helping users avoid high-risk areas and situations. This combination of proactive and reactive safety measures enhances the overall reliability of the system.

By leveraging AI-powered analytics, the Women Safety Analytics system goes beyond traditional safety tools to offer a scalable and efficient solution for individuals and communities. Its ability to adapt to diverse scenarios, such as urban environments or remote areas, makes it suitable for widespread implementation. This invention represents a significant step forward in empowering women with the tools they need to stay safe and secure in an ever-changing world.



Reference Figure 1:

[001] Data Collection (100): Sensors in the wearable device collect physiological and environmental data, such as heart rate, stress levels, and noise levels.

[002] Data Transmission (101): The collected data is transmitted to the mobile application via Bluetooth or other wireless protocols.

[003] Data Analysis (102): The mobile application forwards the data to the cloud-based analytics platform, where machine learning algorithms analyze it for distress patterns.

[004] Threat Detection (103): The analytics platform identifies potential safety threats based on abnormal patterns in the data.

[005] Alerts and Actions (104): If a threat is detected, automated alerts are sent to emergency contacts and authorities with the user's location. The wearable device emits a loud alarm to deter potential threats.

[006] Predictive Insights (105): The platform analyzes historical and real-time data to identify high-risk areas, providing the user with safer route suggestions.