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A Survey on Women Safety–Safest Route Using Machine Learning

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Abstract: *Victimization of sensible phones has increased in today's world, and thus sensible phones can be used quickly for private security. A number of new apps have been developed to provide girls with a security system via their phones. According to World Health Organization NCRB Social Government Organization reports, one-third of all girls worldwide are subjected to dishounarable physical harassment in public places such as railways, buses, and on roads. We've analyzed various existing systems on women's security in this paper. We've seen a decline in the demand for advanced girls security systems to ensure their safety in public places as well as when travelling alone on public transportation such as college buses, company vehicles, and so on. This paper proposed a completely new model for women's security publicly places.*

Keywords: Preprocessing, Feature Extraction, Segmentation

I. INTRODUCTION

Assaulting women has become fashionable in recent years, and it is past time for women to take control of their own security and safety. Women in the modern era should have self-efficacy, which is defined as "confidence in one's ability to deal with a situation without help. "I'm feeling overwhelmed. "Self-efficacy is the belief in one's ability to exert control, control over one's own motivation, behaviour, and social surroundings" empowering women. The main motivation is to travel anywhere at any time of day or night without worry. The idea is to predict the safe route and implement barriers for women. Into confront assertible crime situations and show the route with the highest rate of return crime on the chosen route. As a result, women can avoid certain special places.

II. MOTIVATION

Safety, in its broadest sense, refers to humanity's happiness, contentment, and freedom." "The danger that is least expected strikes us first." "Ultimately, the objectives are straightforward: safety and security." "The people's safety is paramount. "Be the most important law."

III. LITERATURE SURVEY

Deepinder Kaur.,"Face Recognition and RFID Verified Attendance SysIOT Based Women Security: A Contemplation "[1], Currently, safety of women is a supreme concern all over the globe. Especially in India, crime against women is increasing rapidly on daily basis. With the evolution of technology, many solutions have been developed to restrict this serious issue. A swarm of IoT (Internet of Things) software applications is available which are programmed for helping the women in unfavourable circumstances by sending alert messages to the registered contacts. Similarly, there are smart hardware gadgets accessible which comprises of sensors and microcontrollers that can sense the unsafe situation. These gadgets can produce screaming alarm or produce electric shocks to the assailant.

G C Harikiran, "Smart Security Solution for Women based on Internet of Things(IOT)"[2], In today's worldwide scenario, the most pressing concern for any girl is her safety and security, especially in light of the recent surge in incidents of female harassment. Every girl's only thought is of the day when she will be able to go down the street freely, even at unusual hours, without fear of being attacked. This study proposes a novel approach to utilising technology for

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women's safety. "Every day, 848 Indian women are harassed, raped, and killed!!" That is an astronomically large number! We present an idea that will alter how everyone views women's safety. It's a victory when the media focuses on women's accomplishments rather than harassment. We (humans) are unable to respond appropriately in critical situations, the need for a device which automatically senses and rescues the victim is the venture of our idea in this paper. We propose a gadget that integrates various devices; the hardware consists of a wearable "Smart band" that communicates continually with a smart phone with internet rage, fear, and anxiety. The application is programmed and loaded with all the required data which includes human behavior and reactions to different situations like anger, fear and anxiety

Helen , 2 M. Fathima Fathila, 3 R. Rijwana, 4 Kalaiselvi .V.K.G," A Smart Watch For Women Security Based on IoT Concept 'Watch Me'"[3], Helen , 2 M. Fathima Fathila, 3 R. Rijwana, 4 Kalaiselvi .V.K.G abstract : Today, in the current global scenario, Women are facing a lot of challenges. We can hear more news of women harassments than their achievements. There are many live apps and devices for women security via smart phones. Though the use of smart phones have increased rapidly, it is not possible to have the phone all the time in our hand to make a call or click on it, so here we introduced a new technique via smart watches. While a ladies or toddler wearing this 'watch me' is uncovered to sexual or inclined attack, the sensor present in it detects the heart beat price of someone for you to be excessive for the time being by way of the secretion of epinephrine hormone from hpa axis and gets activated, this can no longer only provide a alarm sound to the eye of nearby people, it'll automatically make an call to our registered touch and additionally thru GPS/GSM it's going to hit upon the close by police station and make an ring there so it'll be helpful for police to arrive soon on the spot by way of monitoring the GPS, such a gadget will result in more secure and better environment.

Prem Prakash Murmu," A Novel modernistic techniques in women security system using ESP32 and Arduino Uno"[4], A battery powered portable self-defense device is contained in a bag. The bag contain a camera, gps module, an alarm system and a compressed gas can. All of these modules are interfaces together and a single switch control is given for all the modules. As when a panic switch is pressed the camera will capture the image of the culprit, send the current geographic location with the image to http web server, simultaneously spraying the gas and generating alarm. The image and the geographic location can be accessed anytime to deal with the culprit. All of these modules are to be fitted at the bottom of any ladies purse or in any bag. The nozzle of the compressed gas can along with the camera will be at the side walls of the ladies purse or in a strap of a bag.

Priyanka S, Design and implementation of SALVUS women safety device"[5], India being considered itself as a well developing nation and an eco nomic core, faces several of evils known from ages like dowry, crime against women, sexual assault, abduction and the worst amongst all is rape. In spite of India's literacy rate, the women don't privilege their right to equality and justice in this society. Women suffering these atrocities are even denied the basic human rights as mentioned in the Indian penal code. Women not being as fit (physically) as men need to be protected from the hands of evils of the society. The implementation of the acts and techniques for a safer women is not sufficient and has to be enhanced well enough. In order to overcome all these problems, we should aim on a promising society where women feel safer and secure throughout the world. This proposed idea describes the steps and process as to how the safety device works in ensuring the welfare of the women by instantly sending a message and the location of the victim to the pre stored contacts. This paper also describes as to how the assailant gets scared by the loud noise and the vibration created so as to let go off the victim.

III. COMPARISON

In machine learning, a support vector machine (SVM, also known as a support vector network) is a supervised learning model with related learning algorithms that analyze data for classification and regression analysis. Support Vector Machines (SVMs) are a set of supervised learning methods used for classification, regression, and outlier detection. The advantages of support vector machines are: Effective in high-dimensional space. It is effective even if the number of dimensions is larger than the number of samples. Support Vector Machine (SVM) is a supervised machine learning algorithm that can perform classification, regression, and even outlier detection. The linear SVM classifier works by drawing a straight line between the two classes. The kernel is a feature used by SVMs to help solve problems. These provide shortcuts to avoid complex calculations. The amazing thing about the kernel is that with its help you can move to higher dimensions and perform smooth calculations. The kernel allows you to enter infinite dimensions.

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A convolutional neural network (ConvNet / CNN) is a deep learning algorithm that takes an input image, assigns importance (learnable weights and biases) to different aspects / objects in the image, and distinguishes them from each other. ConvNet requires much less pre-processing compared to other classification algorithms. Filters are developed manually in primitive methods, but ConvNet can learn these filters / properties with sufficient training.

In the study, a compassion between Support Vector Machine (Linear SVM and RBF SVM) and convolutional Neural Networks (CNN) based on programming-based methodology is presented in order to classify hyperspectral (HSI) data. Classification Accuracy of SVM and CNN, it is shown that SVM overcomes CNN, where it gives best results in classification. In the proposed hybrid model, CNN works as an automatic feature extractor and SVM works as a binary classifier.

IV. DISADVANTAGES

The SVM algorithm has some drawbacks. Due to the long training time, it is not really suitable for large datasets. Another drawback is that SVM classifiers do not work well with duplicate classes. Sensitive to noise. A relatively small number of incorrectly named examples can significantly reduce performance. Choosing the right kernel is not an easy task. As the size of the dataset grows, it slows down. Many classification problems can give better results, but they are categorized by geometry. The main drawback of the SVM algorithm is that there are some important parameters that need to be adjusted appropriately to get the best classification results for a particular problem. Parameters that may have better classification accuracy for Problem A may have lower classification accuracy for Problem B. Therefore, users may need to experiment with different parameter settings to achieve satisfactory results.

V. CONCLUSION

Women's safety in India is currently being discussed widely. It has now escalated into a major problem. The rate of crime is increasing. Outside or inside, women are not safe. Women from other countries who are considering visiting India are also wary. This fear, however, cannot keep them from participating in any social activity. There are laws, but there should also be proper safety measures in place that we must strictly adhere to in order to protect women from violence.

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