

Literature Survey

1. RFID-based System for School Children Transportation Safety

Enhancement (Anwaar(Proceedings of the 8th IEEE GCC Conference and Exhibition, Muscat, Oman, 1-4 February, 2015))

This paper presents a system to monitor pick-up/drop-off of school children to enhance the safety of children during daily transportation from and to school. The system consists of two main units, a bus unit, and a school unit. The bus unit the system is used to detect when a child boards or leaves the bus.

This information is communicated to the school unit that identifies which of the children did not board or leave the bus and issues an alert message accordingly. The system has a developed web-based database-driven application that facilitates its management and provides useful information about the children to authorized personnel.

A complete prototype of the proposed system was implemented and tested to validate the system functionality. The results show that the system is promising for daily transportation safety.

2. Design and Development of an IOT based wearable device for the Safety and Security of women and girl children

(Anand Jatti (2016 IEEE International Conference on Recent Trends in Electronics, Information & Communication Technology (RTEICT))

The aim of this work is to develop a wearable device for the safety and protection of women and girls. This objective is achieved by the analysis of physiological signals in conjunction with body position.

The physiological signals that are analyzed are galvanic skin resistance and body temperature. Body position is determined by acquiring raw accelerometer data from a triple axis accelerometer. Acquisition of raw data is then followed by activity recognition which is a process of employing a specialized machine learning algorithm.

Real-time monitoring of data is achieved by wirelessly sending sensor data to an open source Cloud Platform. Analysis of the data is done on

MATLAB simultaneously. This device is programmed to continuously monitor the subject's parameters and take action when any dangerous situation presents itself. It does so by detecting the change in the monitored signals, following which appropriate action is taken by means of sending notifications/alerts to designated individuals.

3. Child Safety Wearable Device

(Akash Moodbidri- 2017 International Conference on Information Networking (ICOIN)- 17 April 2017)

Parents need not have a smart mobile. Set of keywords are used to gain information from the kit. LOCATION keyword is used to obtain the location of the child. UV keyword is used to obtain the temperature of the surroundings. BUZZ keyword is used to turn on the buzzer which is fixed in that device. SOS is used to send a signal to the device.

Merits: This wearable over other wearable is that it can be used in any phone and it is not necessary that an expensive Smartphone is required and doesn't want to be very tech savvy individual to operate.

Demerits: As, this device's battery gives short life-time. High power efficient model will have to be used which can be capable of giving the battery life for a longer time.

4. Smart Intelligent System for Women and Child Security

(Sunil K Punjabi- 2018 IEEE 9th Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON) -17 January 2019)

A portable device which will have a pressure switch. As soon as an assailant is about to attack the person or when the person senses any insecurity from a stranger, he/she can then put pressure on the device by squeezing or compressing it. Instantly the pressure sensor senses this pressure and a conventional SMS, with the victim's location will be sent to their parents/guardian cell phone numbers stored in the device while purchasing it, followed by a call.

If the call is unanswered for a prolonged time, a call will be redirected to the police and the same message will be sent. Additionally, if the person crosses some area which is usually not accessed by the person

then a message with the real-time location is sent to the parent/guardian's phone via conventional SMS.

5. IoT-based Child Security Monitoring System-Lai Yi Heng

(Proceedings of the 3rd International Conference on Integrated Intelligent Computing Communication & Security (ICIIC 2021))

Throughout the research, it is clearly explained the IoT concept, child safety issues and the need of using child security system. Some previous studies have been included for designing the IoT-based child security smart band. It assists parents to monitor their children remotely. In case situations happen, notifications will be sent to parents so that actions can be taken.

Through this, child safety can be ensured and crime rate will be reduced. However, the proposed device is not robust enough and does not contain sufficient functions to operates like a mobile phone. Hence, the future enchantments will be adding more features, software, applications, hardware to make the proposed system capable of working more intelligently, meanwhile guarantee the safety of children.

6. Smart IoT Device for Child Safety and Tracking-(M.Nandini Priyanka

Smart IoT Device for Child Safety and Tracking. Published in: 2019 IEEE)

The system is developed using Link-It ONE board programmed in embedded C and interfaced with temperature, heartbeat, touch sensors and also GPS, GSM & digital camera modules. The novelty of the work is that the system automatically alerts the parent/caretaker by sending SMS, when immediate attention is required for the child during emergency.

Merits: The parameters such as touch, temperature & heartbeat of the child are used for parametric analysis and results are plotted for the same.

Demerits: To implement the IoT device which ensures the complete solution for child safety problems?

7. Child Safety & Tracking Management System by using GPS –

(Aditi Gupta, Vibhor Harit. Published in: 2016 IEEE.)

This paper proposed a model for child safety through smart phones that provides the option to track the location of their children as well as in case of emergency children is able to send a quick message and its current location via Short Message services.

Merits: The advantages of smart phones which offers rich features like Google maps, GPS, SMS etc.

Demerits: This system is unable to sense human behavior of child.

8. Children Location Monitoring on Google Maps Using GPS and GSM-(Dheeraj Sunehera, Pottabhatini Laxmi Priya)

This paper provides an Android based solution for the parents to track their children in real time. Different devices are connected with a single device through channels of internet. The concerned device is connected to server via internet. The device can be used by parents to track their children in real time or for women safety. The proposed solution takes the location services provided by GSM module. It allows the parents to get their child's current-location via SMS.

Merits: A child tracking system using android terminal and hoc networks.

Demerits: This device cannot be used in rural areas.

9. Child Safety Monitoring System Based on IoT-

(N. Senthamilarasi- International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-8 Issue-8 June, 2019)

In our system, we automatically monitor the child in real time using Internet of Things, with the help of GPS, GSM, and Raspberry Pi. This system requires network connectivity, satellite communication, and high-speed data connection when we use web camera and GPS to lively monitor.

It is difficult to monitor when there occurs any hindrance to satellite communication or any network issue. There also occurs time delay in video streaming through the server. Hence in the future, these issues can be

overcome by using Zigbee concept or accessing the system without internet and using high-speed server transmission.

One of the modules in our project is temperature sensor which is used to detect the temperature of the child as well as the surrounding temperature. If there occurs any abnormal rise or fall in temperature in the body of the child or in the surrounding it will notify the user as per the coded time delay as shown in the picture. It will show the temperature and humidity values notify the user based on the predefined value abnormal fall or rise scenarios.

10. IoT Based Smart Gadget for Child Safety and Tracking-

(N. Manjunatha Volume-3, Issue-6, June-2020)

This research demonstrates Smart IoT device for child safety and tracking, to help the parents to locate and monitor their children. If any abnormal readings are detected by the sensor, then an SMS and phone call is triggered to the parents mobile. Also, updated to the parental app through the cloud. The system is equipped with GSM and GPS modules for sending and receiving call, SMS between safety gadget and parental phone.

The system also consists of Wi-Fi module used to implement IoT and send all the monitored parameters to the cloud for android app monitoring on parental phone. Panic alert system is used during panic situations alerts are sent to the parental phone, seeking for help also the alert parameters are updated to the cloud. Boundary monitoring system is implemented on safety gadget with the help of BEACON technology, as soon as the safety gadget moves far away from the BLE listener gadget an alert is provided to itself