IOT BASED SAFETY GADGET FOR CHILD SAFETY MONITORING AND NOTIFICATION

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LITERATURE SURVEY

1 Smart IoT Device for Child Safety and Tracking

Published in: 2019 IEEE

Authors: M Nandini Priyanka, S Murugan, K. N. H.Srinivas, T. D. S. Sarveswararao, E. Kusuma Kumari.

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

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2 **Child safety wearable device**

Published in: 2017 IEEE

Authors: Akash Moodbidri, Hamid Shahnasser

The purpose of this device is to help the parents to locate their children with ease. At the moment there are many wearable's in the market which helps to track the daily activity of children and also helps to find the child using Wi-Fi and Bluetooth services present on 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 becapable of giving the battery life for a longer time.

3 Child Safety & Tracking Management System by using GPS

Published in: 2016 IEEE

Authors: Aditi Gupta, Vibhor Harit.

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.

4 Children Location Monitoring on Google Maps Using GPS and GSM

Published in: 2016 IEEE

Authors: 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.

5 Child Safety Monitoring System Based on IoT

N. Senthamilarasi1, N.Divya Bharathi2, D.Ezhilarasi3, R.B.Sangavi4

A.RFID-based System for School Children Transportation Safety Enhancement :

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 facilities 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.

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

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. **C. Child Safety Wearable Device:**

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.

D. Smart Intelligent System for Women and Child Security:

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.