IOT BASED SAFETY GADGET FOR CHILD SAFETY MONITORING & NOTIFICATION

Team Members

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Problem Statement

The increasing need for protection of children at present times and also when child can be lost in crowded areas. Using Bluetooth and Wi-Fi it is not possible to track larger distance.

Literature Survey

2016

Title: 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.

Title: 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.

2017

Title: 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 wearables 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 be capable of giving the battery life for a longer time.

2019

Title: 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.

2020

Title: IoT Based Smart Gadget for Child Safety and Tracking.
Published in: 2020 IJRESM.
Authors: Angeline Reeba Karkada, Vaishnavi M Shetty, Preethi Salian.

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 parent's 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.

Merits: Live location tracking , Panic alert systems, stay connected feature, health monitoring system, gadget plug and unplug monitoring, boundary monitoring system.
Demerits: The system is dependent on communication signal/network signal for the smart gadget to trigger automatic phone call/SMS during panic situation. It can be difficult to detect when network signal is not reachable/weak/when the smart gadget moves outside the boundary range. Hence, it can be improved by increasing the range.

2021

Title: IoT-based Child Security Monitoring System
Published in: 2021 Atlantis Press
Authors: Lai Yi Heng1, Intan Farahana Binti Kamsin

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.

Merits: Live location tracking , Panic alert systems, stay connected feature, health monitoring system, gadget plug and unplug monitoring, boundary monitoring system.
Demerits: The system is dependent on communication signal/network signal for the smart gadget to trigger automatic phone call/SMS during panic situation. It can

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