**PARISUTHAM INSTITUTE OF TECHNOLOGY AND SCIENCE**

**THANJAVUR**

**LITERATURE SURVEY**

**IOT BASED SAFETY GADGETS FOR CHILD SAFETY MONITORING AND NOTIFICTICATION**

****

**TEAM MEMBERS:**

S R YOGAMALINI (Team leader)

M. LAVANYA

K. VISHWA

K. GOKUL

**Intelligent Child Safety System using Machine Learning in IoT Devices**

**Author :**  Dr. Sreeja B S, Aparajith Srinivasan, Akshaya R, Abirami S,

Divya N.

**Year:** 2020

**Abstract:**

Child safety and tracking is of most importance as children are the most vulnerable. With increasing crime rates such as child kidnaping, child trafficking, child abuse and so on such as child kidnaping, child trafficking, child abuse and so on the need for an advanced smart security system has become a necessity. With this motivation, a self-alerting “INTELLIGENT CHILD SAFETY SYSTEM USING MACHINE LEARNING IN IOT DEVICES” is developed to aid parents to monitor and track their children in real time as an alternate to stay beside them. This system is intended as an everyday wearable device on the child, in the form of a wrist band, hand glove, arm band or a belt. The system is designed to continuously monitor the location and body vitals of children. This electronic system comprises of an Arduino controller, a Raspberry-Pi and sensors to detect the changes in parameters such as temperature, BVP (Blood Volume Pulse) and GSR (Galvanic Skin Response). The system also uses a GSM and GPS module. Decision Tree Classifier Algorithm is used to detect any distress situation with sensor values as inputs. The location of the victim is traced using the GPS module and is sent to the registered contact numbers as a text message using a GSM module. The work lies in the autonomous decision making process with increased accuracy.

**Keywords**—Child safety, GPS, GSM, Sensors, Arduino, Raspberry-Pi, Decision Tree Classifier, Autonomous Decision, Intelligent Child Safety System using Machine Learning in IoT Devices.

**Advantage:**

1. According to the child mental and physical condition, when kids are in danger automatically the message notification will be sent to the parents (register number).
2. Distance is not a barrier to track a child location - (GPS Tracker).

**Disadvantage:**

1. Decision Tree Classifier Algorithm is a complex structure.
2. Cost is too high.

**Device to Remotely Track and Locate the Position**

**of a Child for Safety**

**Author :**  S.M.K.C.S.B. Egodawel, H.M.D.M.B.Herath, R.D.Ranaweera and J.V.Wijayaklasooriya.

**Year:** 2020

**Abstract –** Parents are always worried about the wellbeing of their children. As per the Statistics report 2017 by Missing Children Europe Organization a child is reported missing every 2 minutes. Due to the threat, parents re prone to by their children mobile phones to keep in touch with them. However, giving Mobile phone to a child can cause issues including cyber bullying improper use of social networks, access to mature age and illicit content on the internet and possibly, phone theft. As an effort to tackle some of the those issues, this paper propose a solution which enables parents to call locate and track their children using a child-friendly mobile device. The common scenario the device would travel alone on a typical route, for instance child who walks from home to school an back. The device can be calibrated to keep track of a typical route of travel. Then, if the device detects some deviation from the usual route, it would trigger notification to parents. A probability matrix based novel algorithm is introduced to detect route deviation. Design details of the mobile device, along with the details of the rote deviation detection algorithm are presented in this paper.

**Keywords –** Child safety, GPS, GSM, IoT Mobile Phone, Probability, Route prediction, Tracking.

**Advantage:**

1. Track over 20000Km.
2. Maps are analytics of route short or long.
3. Hear voice via speaker vi GSM network.

**Disadvantage:**

1. Tracking by trackers or intruders.
2. Children play with controller model
3. Resolution of the map navigation is less.

**Localization module for missing child scenario in IoT safety domain**

**Author :** Athina Tasnousa, Vasileious-Rafail Xefteris, Dimos Ntiodis, Christos Chtzigeorgious, Georgios Meditskos, Stefnos Vrochidis, Charalampos Z. Patrikakis an Ioannis Komptsiaris

**Year:** 2021

**Abstract -** Lately, we observe an increase in the development of Internet of Things (IoT) systems. The inter connection of multiple devices offers improved solutions in many sectors. In the current paper, we describe the localization framework of a project that incorporates IoT technologies to face unwanted incidents in crowded spaces. The localization framework responds to the scenario of a missing child in crowded outdoor spaces and combines Received Signal Strength Indicator (RSSI), Bluetooth low energy tags and trilateration. The experimental results of trials performed in two outdoor spaces are also reported. This frame work is currently being tested in the actual pilot premises.

**Keyword –** RSSI indicator, Bluetooth, IoT device

**Merits:**

1. Cost effective
2. Low power consumption

**Demerits:**

1. Slow response on mobile.
2. Frame work suitable for limited size.

**IoT-enabled Smart Child Safety Digital System an Architecture**

**Author :**  Madhuri Madhuri, Asif Qumer Gill, Habib Ullah Khan.

**Year :** 2020

**Abstract**  – Safety of a child in a large public event is a major concern for event organizers and parents. This paper addresses this important concern and proposes an architecture model of the IoT- enable smart child safety tracking digital system. This IoT-enabled digital system architecture integrates the Cloud, Mobile and GPS technology to precisely locate the geographical location of a child on an event map. The proposed architecture model describes the people, information, process, and technology architecture elements, and their relationships for the complex IoT-enable smart child safety tracking digital system. The proposed architecture model can be used as a reference or guide to assist in the safe architecture driven development of the various child tracking digital systems for different public events.

**Keywords** – Digital Architecture, Internet of Things, Salesforce, GPS Tracking, Android Application. A Hybrid Model on Child Security and Activities Monitoring System using IoT.

**Merits:**

1. Easy to track the child in the public event.
2. Cloud will store the location of child in an event.
3. Low power consumption- GPS.
4. High sensitivity to the receiver – GPS.

**Demerits:**

1. It has an ability to track the child in the range of 15-100 meter.
2. The record of a child registration is deleted, then the corresponding records related to it is also automatically deleted.
3. Power-chip is too costly.

**A Hybrid Model on Child Security and Activities Monitoring System using IoT**

**Author :** Dr. R. Kamalraj, Dr. M. Sakthivel.

**Year :** 2018

**Abstract**— In real world, the children safety is a huge question mark in everyone’s mind. Parents always expect their children should live in a secured place where they can spend their time and mind without any problem. But, typically half of them are facing so many issues. This issue can be monitored by using IoT components and sensors to check in the child environment whether people with unaccepted behavior are moving. If children close with them, then the system has to give an alert message that someone stands with the child. By tracing the locations of the children, the parents can able locate where the problem is and how they can help the child from such issues. The Alcohol and Smoke Gas Sensor are recommended along with Blood Pressure sensor to check whether the child in any abnormal conditions. By measuring the different input data and taking appropriate decisions may help the people to save the children

**Keywords -** Child Security, Hybrid IoT model, Activities Monitoring, Save Children.

**Merits:**

1. The main purpose of hybrid model is to finding and saving the children from abuse activities.
2. Then the given models are used to prevent the child from trouble.

**Demerits:**

1. The component size should be reduced to wearable and weight is also too high.
2. The component small may be one of the completing proposed hybrid model for providing Good support for the children.