SURVEY ON IoT ENABLED SAFETY GADGETS FOR CHILD MONITORING

A LITERATURE SURVEY

Submitted by

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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.

Literature Review:

1. **Kamat, Mr DK, Ms Pooja S. Ganorkar, and Mrs RA Jain. "Child activity Monitoring using Sensors."International Journal of Engineering and Techniques 1.3 (2015): 129-133.**

➢ This research explains about a smart wearable device like a wristband which tracks the child from time to time to ensure their safety.

➢ If any problem occurs it would alert parents through the cell phone so that they can take immediate action.

➢ This paper focus on the SMS text enabled communication.

2. Saranya, J., and J. Selvakumar. "Implementation of children tracking system on android Mobile terminals." Communications and Signal Processing (ICCSP), 2013 International Conference on. IEEE, 291

➢ Child security is the foremost common issue emerging around the world.

➢ There are numerous issues to youngster security and this work primarily Manages kid security from the dangers like missing, abducts.

3. P. Wei, R. Guo, J. Zhang and Y. T. Zhang, "A new wristband wearable sensor Using adaptive reduction filter to reduce motion artifact", Information Technology And Applications in Biomedicine 2008. ITAB 2008. International Conference on, pp. 278-281, May 2008

➢ A New Wristband Wearable Sensor Using Adaptive Reduction Filter to Reduce Motion Artifact[10] helps to reduce artifact corruption by using some filtering technique for giving the exact measurement.

4. A. Moodbidri and H. Shahnasser, "Child safety wearable device", Information Networking (ICOIN) 2017 International Conference on, pp. 438-444

➤ Some works like Design and implementation of Microcontroller Based Short Message Control System[7], Child safety wearable device[8] uses SMS platform as a communication medium.

➤ Child Safety Wearable Device[8] is a tracking safety device which also uses SMS text communication on a GSM platform.

5. K. Braam, T. C. Huang, C. H. Chen, E. Montgomery, S. Vo and R. Beausoleil,

"Wristband Vital: A wearable multi-sensor microsystem for real-time assistance via low-power Bluetooth link" in 2015 IEEE 2nd World Forum on Internet of Things (WF-IoT), IEEE, pp. 87-91.

➤ Wristband Vital: A Wearable Multi-Sensor Microsystem for Real Time Assistance via Low-Power Bluetooth Link[6] is a wearable tracking device which is a light-weight and low-cost device used to help the people in a emergency situation like a child is locked into a car, the vital band sends an alert using the nearby.

➤ Bluetooth devices to attend the child who is in trouble

6. M. Haghi, K. Thurow and R. Stoll, "Wearable devices in medical internet of things: scientific research and commercially available devices", Healthcare informatics research.

➢ Wearable Devices in Medical Internet of Things: Scientific Research and Commercially Available Devices[3] makes a comparative study of different health care devices both in commercial purpose and scientific papers.

➢ There are quite a few wearable devices in Medical Internet of Things and their comparative analysis[3] which could be used as a base framework for designing the proposed device.

7.Proceedings of the International Conference on Inventive Research in Computing Applications(ICIRCA2018)IEEE Xplore Compliant Part Number:CFP18N67-ART;ISBN:978-1-5386-2456-2.

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

- The main focus of this proposed hybrid model is finding possibility of saving children from abuse activities.
- The society is not ready to accept such issues in its side.It has to be removed from the society by giving providing good support to the child.
- Many incidents happened in and around the world but helping the children atlast is not a perfect one..Every parent wants a peaceful environment for their child to live happily in the world. Hence, the given model may give a chance of saving child whenever they are in the trouble.

- The IoT model is used on many application are as in order to reduce the Problems on the application execution.Like smartwatches more advanced wearable models are required to reduce the risks in the human lives by giving hands to the children.
- The composition of more different purpose sensor may improve the abilities of required system design on the given problem domain.
- This paper has covered about the issues of children how it can be overcome by using advanced IoT components available in the hand.

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IoT enabled Smart Child Safety Digital System Architecture

- Based on this initial evaluation,it can be stated that proposed architecture model is simple in design and thus it is easy and cost effective to extend and implement according to the needs of different stakeholders.
- It is anticipated that the proposed integrated digital technology architecture such as the Sales force cloud, Mobile Application and GPS can be easily used for tracking a missing child in an event.
- This work is a first steps towards the development of a working software for a Smart Child Tracker.

- There are a number of options for customizing the architecture such as the use of tracking pin,which can be easily clipped on to the child's clothing.
- Thus, future researcher can be conducted to analyze alternate tracking options and architecture design patterns that could replace GPS with low cost RFIDsor iBeacons.orinstance,RFID tags can be a very good option for active tracking.

Problem Statement:

- 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.
- Children are the backbone of one's nation, if the future of children was affected, it would Impact the entire growth of that nation. For every 40 seconds, a child goes missing in this world.
- Due to the abusements, the emotional and mental stability of the children gets affected which in turn Ruins their career and future.
- Parents Are responsible for taking care of their own children. But, due to economic Condition and aims to focus on their Child's future and career, parents are forced to crave For money.Hence, it becomes difficult to cling on to their Children all the time.
- The system has a developed web-based database-driven application that facilities its management and provides useful information about the children to authorized personnel.
- 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.

- Real-time monitoring of data is achieved by wirelessly sending Sensor data to an open source Cloud Platform. 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.

- In our system, we provide an environment where this problem can be resolved in an efficient manner. It makes parents to easily monitor their children in real time just like staying beside them as Well as focusing on their own career without any manual Intervention

Conclusion:

The IoT model is used on many application areas in order to reduce the problems on the application execution. Like smart watches more advanced wearable models are required to reduce the risks in the human lives by giving hands to the children. The composition of more different purpose sensor may improve the abilities of required system design on the given problem domain. This paper has covered about the issues of

children how it can be overcome by using advanced IoT components available in the hand. But more research has to be continued to reduce the size of the device and fastness of the device in communication wise.