WWW.IJRPR.COM

**International Journal of Research Publication and Reviews**

Journal homepage: www.ijrpr.com ISSN 2582-7421

# A Smart Approach To Child Safety In The Digital Age

***S Upendra [1] ,Dr S Bhargavi [2], Sudarshan G [3] Shreyas S R [4]***

[1234] Dept. of Electronics & Communication, SJC Institute of Technology, Chickballapur, India

**ABSTRACT:**

In today's current situation we see that there are many children getting kidnapped or lost. The survey states that around thousands of children are been missing every year and it is very pathetic that around ¾ are been rescued and remaining are found to be lost. To address this sort of situations a SOC (Safety of Child) wearable tracker is been proposed in this paper. It enables the information of the child to be send to the parents mobile. This is a simple application which is adaptable to all sort of mobile and it is not expected to be only smart phone. The information passed about the child location, temperature, heart beat rate is send to parent mobile and finally SOS(save our soul) light and buzzer sound is raised which is heard by nearby people and child can be rescued. These information are received upon certain keywords such as LOCATION, BUZZ, HBT, TEMP etc. The second means of receiving the information is through the heart beat rises which is been detected by the sensor and when it crosses the threshold value immediately the location and heart beat is send to parent which automatically convey that their child is in need of help. This device is helpful and is of great relief for parents to safeguard their children at all cases.

Keywords: Safety of child, Save our soul, Location, BUZZ, HBT, TEMP.

## INTRODUCTION

The Internet of Things System (IoT) refers to the set of devices and systems that stay interconnected with real-world sensors and actuators to the internet. IoT includes many different systems like smart cars, wearable devices and even human implanted devices, home automation systems an lighting controls; smart phones which are increasingly being used to measure the world around them. Similarly, wireless sensor networks that measure weather, flood defences, tides and more. There are two key aspects to the IoT. The devices themselves and the server-side architecture that supports them. The motivation for this wearable comes from the increasing need for little children times as there could be scenarios of the child getting lost in the major crowded areas. Most of the wearables available today are focused on providing the location, activity, etc. of the child to the parents via Wi-Fi and Bluetooth. The platform on which this project will be running on is the Arduino Uno microcontroller board based on the ATmega328P, and the functions of sending and receiving SMS, calls and connecting to the internet which is provided by the Arduino GSM shield using the GSM network. Also, additional modules employed which will provide the current location of the parents via SMS. In today's digital age, ensuring child safety online is paramount. With the widespread use of smart phones, tablets, computers, and the internet, children have access to vast amounts of information and communication channels. However, this also exposes them to potential risks such as cyberbullying, inappropriate content, online predators, and privacy breaches. Parents and caregivers play a vital role in monitoring their children's online activities. This includes setting rules and guidelines for internet usage, using parental control tools to filter content, and regularly checking in with their children about their online experience.

## LITERATURE SURVEY

Spatial analysis applied on play area's urban configurations to enhance the safety of children.
Authors: Morouane Samir Guedoub and Selma Saraoui.
Abstract: This paper aim is to enhance the safety of children in play areas of urban spaces. The concerns about child security have been raised especially in the outdoor urban space of the collective habitat. Nowadays, Risks and dangers are still dominant phenomena that become a parental first preoccupation towards their children.

The problem of child safety in the digital space.
Authors: Lubenets Iryna, Kulyk Oleksandra.

Abstract: This paper explains rapid development of digital technologies has transformed the lives of children and young people. The digital space offers children endless opportunities to learn, play, communicate and express themselves. However, it also poses a number of risks and threats, such as cyberbullying, grooming and express themselves.

Wearable device for monitoring child safety in distress situation using IoT.
Authors: Prabhu Vinayagam, Jaganathan Deenadayalan.
Abstract: This paper explains in today's current situation we see that there are many children getting kidnapped or lost. The survey states that around thousands of children are been missing every year and it is very pathetic that around ¾ are been rescued and remaining are found to be lost.

## IOT IN CHILDREN SECURITY SYSTEM

The new technology Internet of Things (IoT) provides much support for making advanced devices and tools to design and implement the solutions on the real world life issues. Although some studies have looked into using personal monitoring methods for children based on wireless communication, we exploit such devices to monitor the location and activities of children and to proactively notify guardians of potential safety risks. After sending children to school , the parents may get the SMS about the child whether reached the school is --not. If the system gets failed in the school, then the parents have made the call to the teacher to conform about their child present in the school. Hence the tracking sensor may give 100% perfect result to the parents smart phone about the status and location of their child. Here we have taken one more problem that the level of people who are near to the child because the health issues of the child cannot be monitored continuously. So, the health of the child and the quality of the surrounding environment of the child should be checked. In such case, the information can be sent to the parents immediately to enquire about the position of the child.

1. **GPS Location Sensor:** The connection between the Arduino Uno and the GPS module established with three wired connections which enable the Arduino to read the GPS data. The GPS module receives location information from the various satellites present in the NAVSTAR.

2. **Temperature:** In order to measure the temperature of the surroundings of the child, a seed studio grove temperature sensor was used. The sensor module is equipped with a thermistor detectability for this sensor.

3. **UV Sensor:** In order to measure the ultraviolet radiation intensity present around the surrounding of the child, a seed studio grove UV sensor is built on the GUVA-SI2D sensor (spectral range of 200nm-400nm). The sensor works by outputting electrical signal which alters with UV intensity. It is a highly sensitive sensor.

4. **SOS Light:** The purpose of the SOS light is to be able to alert the people nearby that the child might be in distress since the light will be flashing the universal SOS light symbol which many people noudays know for to be a sign for help.

5. **Arduino GSM Shield:** The GSM shield will constantly be scanning the received text messages for the specific keywords such as "LOCATION" "TEMPERATURE" "UV" "BUZZ" "SOS". If the text message received does not contain any of the keywords, then the GSM shield had programmed to delete the message completely and reply back nothing to the sender.

## ADVANTAGES

1. Staying connected
2. Data accuracy
3. Efficiency
4. It can be used in any smart phone
5. Two-way communication

## APPLICATION

1. Location tracking
2. Emergency alert
3. Health monitoring
4. Safety during outdoor activities

## CONCLUSION

The main idea of this paper is to provide better and efficient health services and security to the school children by implementing a networked information cloud through IoT so that the experts and doctors could make use of this data and provide a fast and an efficient solution. The final model will be well equipped with more features 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 improved 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.

## REFERENCES

[1]Chung, H., Park, Y . R., Jung, W ., Lee, Y ., & Lee, J. (2019). A Wearable Child Safety System with Biometric Authentication and GSP Tracking. Journal of senior, 2019.

[2]Ma, Zhang, M., & Shi, Y. (2020). A novel design of child safety wearable device based on internet of things. In 2020 IEEE 10th International Conference on Software Engineering and Service Science (ICSESS) (pp. 102-105). IEEE.

[3]Lubenets Iryna, Kulyk Oleksandra, "The problem of child safety in the digital space ," in IEEE Wireless Communications, vol. 22,no. 1, pp. 1O-11, 15 Sep 20.

[4]Morouane Samir Guedouh and Selma Saraoui. "Spatial Analysis Applied on Play Area's Urban Configurations to Enhance the safety of children,"pp.72-77.31 Jan 2024.

[5]Prabhu Vinayagam, Jaganathan Deenadayalan, "Wearable Device for Monitoring Child Safety in Distress Situation using IoT,"pp.212-216, Nov 2022.

[6]Ramachandran Manickam, "A Review on Child Safety Monitoring System Based on IoT" in IEEE Industrial Electronics Magazine, vol. 8, no.4, pp. 67-68, 8.June.2023.

[7]Bonomi, A. G., & Mainetti, L. (2021). A wearable safety device for children using RFID. In Proceedings of the 3rd International Conference on Information and Communication Technologies for Ageing Well and e-Health (pp. 1-9).

[8]Ozturk, A. B., Yilmaz, E., & Ozturk, M. A. (2019). Development of wearable safety device for children using IoT. Journal of Engineering Research and Applied Science, 8(1), 119-125.

[9]Guerrier, S., & Lebel, k. (2022). Wearable technology: A review of the applications and impact on safety and health risks for children. Journal of Prediatric Nursing, 35, 4-8.