

IoT Based Safety Gadget for Child Safety Monitoring and Notification

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PROJECT STUDENTS:

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NEED FOR THE PROJECT

- ✓ To Protect the child from being Harassed
- ✓ To Save the children from child Trafficking
- ✓ To Protect the children from being converted to child labour
- ✓ To develop them a safe and secure environment to live and grow
- ✓ In 2020, the government reported identifying 6,622 trafficking victims and 694 potential trafficking victims compared with 5,145 trafficking victims and 2,505 potential victims identified in 2019.
- ✓ In 2020, authorities identified 5,156 victims in labour trafficking, including 2,837 in bonded labour, and 1,466 in sex trafficking; authorities did not report the type of trafficking for the 694 potential victims

LITERATURE SURVEY

S.N O	TITLE	MODEL / TECHNIQ UES USED	MERITS/ DEMERITS	OUTCOMES
1.	Chen, L.W., Chen, T.P., Chen, H.M. and Tsai, M.F., 2019. <i>“Crowdsourced children monitoring and finding with holding up detection based on internet-of-things technologies”</i> ,IEEE <i>Sensors Journal</i> , 19(24), pp.12407-12417.	•iBeacon •3-axis accelerometer Modules	MERIT: Higher recognition accuracy than existing method DEMERIT: Only 95% success rate of recognition	Find missing children using IoT localization, wearable devices, and surrounding smartphones
2.	Yao, C.Y. and Hsia, W.C., 2018. <i>“An indoor positioning system based on the dual-channel passive RFID technology”</i> ,IEEE <i>Sensors Journal</i> , 18(11), pp.4654-4663.	Passive RFID	MERIT: Large positioning area,low RF total radiated power DEMERIT: More time for positioning the tag	A dual-channel low-power passive RFID positioning system

LITERATURE SURVEY

S. N O	TITLE	MODEL / TECHNIQ UES USED	MERITS/ DEMERITS	OUTCOMES
3.	Finn, J.W., Wagner, J.R., Walters, E.J. and Alexander,K.E.,2012.“ <i>An integrated child safety seat cooling system—Model and test</i> ” <i>IEEE transactions on vehicular technology</i> , 61(5), pp.1999-2007.	IOT gateway	MERIT: Ability to maintain an acceptable occupant temperature for elevated cabin temperatures. DEMERIT: The system could not maintain survivable temperatures for extended operating periods.	A thermally protected child safety seat using Peltier effect Thermoelectric modules.
4.	Li, D., Jia, X. and Zhao, J., 2020. “ <i>A novel hybrid fusion algorithm for low-cost GPS/INS integrated navigation system during GPS outages</i> ” <i>Ieee Access</i> , 8, pp.53984-53996.	Matlab Hybrid fusion Algorithm	MERIT: proposed method meets the real-time requirements of combined positioning systems. DEMERIT: when different equipment and experimental environments are used, we do not claim that the parameters of this article are set to the best combination.	This method can be used in all environments, including frequent GPS outages in urban environments ⁴ .

LITERATURE SURVEY

S.NO	TITLE	MODEL / TECHNIQ UES USED	MERITS/ DEMERITS	OUTCOMES
5.	Haghi, M., Neubert, S., Geissler, A., Fleischer, H., Stoll, N., Stoll, R. and Thurow, K., 2020. “ <i>A flexible and pervasive IoT-based healthcare platform for physiological and environmental parameters monitoring</i> ”. <i>IEEE Internet of Things Journal</i> , 7(6), pp.5628-5647.	IOT gateway	MERIT: IoT-gateway is flexible to adapt different wearables and the proposed wrist worn prototype is ambient monitoring.	A flexible, pervasive, prolonged, and convenient IoT-based platform for child safety monitoring of ambient, physiological, and behavioral.

INFERENCE FROM LITERATURE SURVEY

- ✓ Missing children have been found using the iBeacon 3 technology along with axis accelerometer modules with the help of wearable devices and surrounding smartphones.
- ✓ Dual-channel low-power Passive RFID positioning system can be used for positioning which has high accuracy and low power consumption that can be extended to larger areas.
- ✓ Temperature can be maintained using thermoelectric modules in case the child is left alone inside the car or any closed environment.

REFERENCES

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- [2] Benisha, M., R. Thandaiah Prabu, M. Gowri, K. Vishali, M. Anisha, Ponmozhi Chezhiyan, and C. Jim Elliot. *"Design of Wearable Device for Child Safety."* In 2021 Third International Conference on Intelligent Communication Technologies and Virtual Mobile Networks (ICICV), pp. 1076-1080. IEEE, 2021.
- [3] Nagamma, H. *"IoT based smart security gadget for women's safety."* In 2019 1st International Conference on Advances in Information Technology (ICAIT), pp. 348-352. IEEE, 2019.
- [4] Isa, M.Z.M., Jamil, M.M.A., Ibrahim, T.N.T., Ahmad, M.S., Abd Rahman, N.A. and Adon, M.N., 2019, November. Children security and tracking system using bluetooth and gps technology. In 2019 9th IEEE International Conference on Control System, Computing and Engineering (ICCSCE) (pp. 184-187). IEEE.