

Enhancing Safety in Automobiles: IoT-Based Car Seat Alert System Integration with Load Cells and GSM Module

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1. Introduction

Pediatrics vehicular heatstroke is a critical and life-threatening issue that requires prompt attention. Furthermore, the phenomenon of property theft in locked cars is a major source of concern for both individuals and communities. This issue raises concerns about the efficiency of current public awareness campaigns and technological solutions to prevent such incidents. Despite advancements in vehicle security systems, the frequency of thefts and pediatric vehicular heatstroke from seemingly secure vehicles remains a significant issue, necessitating the development of comprehensive strategies to address flaws in existing automobiles security measures. As life gets busier people rush around to get things done or when they are stressed or distracted, we are going to see more of these cases of unintentional neglect. According to (Krishnakumar C et al., 2021), since most cars in the future will be more and more network-oriented and use telemetry, which there is a lot of ongoing scientific research in this area. Thankfully, innovations in technology are constantly creating new solutions for people to reduce their daily burdens.

Therefore, the primary objective of this research is to develop a prototype that utilize IoT technology into a system that can ensure early detection and remind parents or

user about the presence of objects and their kids in the backseat of their vehicles.

2. Methodology

Basically, the research methodology that has been employed are explained in this chapter in order to accomplish the research objective. There are six (6) phases that were carried out such as initiation, planning, designing and developing, implementation and testing, analysing the results, and documentation phase.

3. Results & Discussion

There were three different types of tests: functionality, network, and Technology Acceptance Model (TAM) that indicates the system's potential. The results of functionality testing revealed that the prototype functioned properly during the test period. Network testing revealed that the prototype's performance affected by the distance between the user and the prototype. The TAM surveys were separated into two sections for the responders which includes several questions about perceived usefulness and perceived ease-of-use. To score each question, the mean value for each construct is calculated. Upon the testing, the prototype demonstrates its capability to send alert calls quickly. Figure 1 illustrates the results of the network testing.

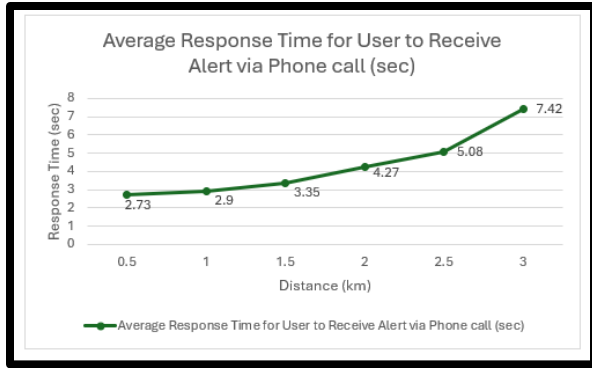


Figure 1. Average response time for user to receive alert via phone call

4. Conclusion

In this research, Enhancing Safety in Automobiles: IoT-Based Car Seat Alert System Integration with Load Cells and GSM Module are successfully realized its objectives which to ensure early detection and remind parents or user about the presence of objects and their kids in the backseat of their vehicles by sending alert via phone call.

References

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