Sign Language and Panic Switch System Using IoT

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Abstract:

This paper presents the development of a new technology which has the ability work with the sign language for deaf peoples which has the ability to speak with the outer world and in case of emergency to the deaf peoples, this system will send the alert messages to the guardian and police about his/her emergency using IoT technology and "Blynk" IoT cloud platform.

Keywords: Sign language,deaf peoples.

Introduction:

As we know, deaf peoples can only communicate with the outer world by using the sign language. But due to the various reasons this language has some drawbacks due to the conventional way.

Hence this paper revolves around IoT technology which will take care of this sign language which will do the automation for communicating with the guardian of the deaf person using flex sensor, NodeMCU board,LCD display for messages and blynk IoT cloud platform for connecting that person with the outer world in case of emergency.

In summary, this paper presents a novel approach to do the sign language and panic switch system design using IoT. The project offers a more efficient and cost-effective solution for the deaf peoples and will definately contribute towards a more sustainable future

Proposed Project Work:

We are proposing a system which will help to counterfeit sign language reading issues at portable scale. The proposed project is to design and build a system which will convert the sign language into readable message using flex sensor and LCD display, location tracking by using GPS NEO6M module and internet connectivity using Wi-Fi and cloud storage as blynk IOT cloud platform. The first step in the project will be to determine the size and dimensions of the hardware. This will be based on the intended use, as well as the amount of items to be transported. This has been designed and constructed; it will undergo thorough testing to ensure that it meets the desired specifications. This will involve testing its cooling efficiency, power consumption, and overall durability.

System Architecture:

The system is divided into given sections:

Stage 1: In the first stage, NodeMCU board is used to assemble the flex sensor,GPS Neo 6M, I2C LCD display.

Stage 2: In the second stage, the hardware components are assembled.

Stage 3: In the third stage, the NodeMCU is programmed to control the system. The NodeMCUcan be programmed using the Arduino IDE and can be connected to the peripherals

Stage 4: In the fourth stage, the system is tested and optimized for efficiency and performance.

Overall, the system architecture of the system with NodeMCU involves the design and assembly of hardware components,

programming of the nodeMCU for control and monitoring, and testing and optimization for efficiency and performance.

Advantages:

1. Cost effective solution.
2. In case of emergency, deaf people can directly connect with the police.
3. Easy to use.
4. Low maintenance.
5. Compact design: The combined system has a compact design, making it suitable for small spaces, and easy to move if required.

Conclusion:

In conclusion, this system provides automation in sign language detection and panic switch based system using IoT technology. Also this will help to resolve the problem of detecting sign language for

deaf peoples using IoT technology and trending cloud platform like Blynk.

References:

1. Solvang Iselin Ertzgaard, Kristin Naalsund, SofieT¢nder, Hansen GiskeSindberg, Hagan Tobias Bang, CosmasMnyanyi, et al., "Prevalence of hearing impairment among primary school children in the kilimanjaro region within tanzania", International Journal of Pediatric Otorhinolaryngology, vol. 130, pp. 109797, 2020.

2. Dolors Rodriguez-Martin, Catalina Rodriguez-Garcia and Anna Falco-Pegueroles, "Ethnographic analysis of communication and the deaf com-munity' x2018;S rights in the clinical context", Contemporary nurse, vol. 54, no. 2, pp. 126-138, 2018.

3. Li Xu, Lu Rongxing, Liang Xiaohui, ShenXuemin, Chen Jiming and Lin Xiaodong, "Smart community: an internet of things application", IEEE Communications magazine, vol. 49, no. 11, pp. 68-75, 2011