

A Review Paper On A Speaking Module For Deaf And Dumb Using Android

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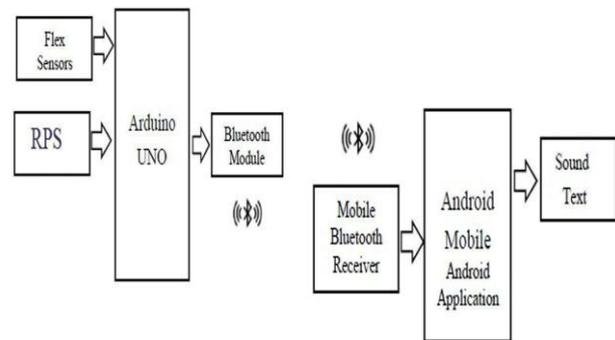
Abstract—Gesture based communication is the way through which nearly deaf and unfit to talk people can talk with each other. It has been seen that debilitated people believe that it's difficult to interface with society. Average individuals can't grasp their signal based correspondence. To interface this opening, the proposed structure goes about as the mediator among incapacitated and standard people. The proposed strategy extricates highlights from the sign through Flex Sensor and afterward transmits that sign signals through Bluetooth to the Android Mobile. In an Android phone by utilizing the versatile App approaching messages will change over to voice messages. This coordinated component improves the performance of the system. Our proposition will help the nearly deaf and unfit to talk to people who can't impart, or experience issues in correspondence. An arrangement information glove is furnished with five images sensors, every one of the images sensors is intended to be fixed on every one of the fingers of the hand glove for the checking and detecting of static developments of the fingers of the hand. at whatever point an activity for communication via gestures is played out, the twisting qualities are acquired and the relating activity is recognized by the arduino and sends data to android cell phone utilizing Bluetooth compensation. That android cell phone has an application that actuates the relating voice as per the sign.

INTRODUCTION

"Speech" and "Gestures" are the articulations, which are generally utilized in correspondence between people. Getting the data is the underlying advance. The resulting advance, that of seeing the sign or movement once it has been gotten is fundamentally all the more testing, especially in a perpetual stream. Truth be told presently, this is the focal point of the exploration. The goal of this venture is to plan a basic implanted framework based imparting gadget for nearly deaf and unfit to talk people. Here two significant issues are thought about. Initial one is not too sharp for individuals speaking with a typical individual and the second one is correspondence among nearly deaf and unfit to talk people. To take care of this issue we have utilized two methods of activity right now. We are estimating the activities performed by the nearly deaf and unfit to talk to people utilizing motion sensors joined to gloves in a hand of the client. When the glove is put in the hands, at whatever point an activity for gesture based communication is played out, the twisting qualities are acquired and the relating activity is distinguished by the arduino and sends data to android cell phone utilizing Bluetooth substitution. That android cell phone has an application that enacts the relating voice as indicated by

sign as an application that enacts the comparing voice as indicated by the sign.

BLOCK DIAGRAM



The major building block of this project is:

- Power supply
- Arduino
- Bluetooth
- Flex sensor
- Android mobile with app

CIRCUIT DIAGRAM AND OPERATION

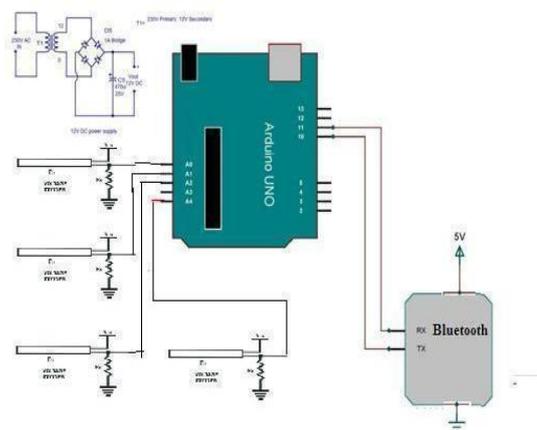


Fig.2: Circuit diagram

The 4-flex sensor measures the bending of fingers according to gesture and outputs change in resistances corresponding to the amount of ending. All the data from sensors are then processed on Arduino UNO involves Combination of all the sensor outputs in order to match the resultant output with pre-stored values of different

signs regarding the voice and text. For this, appropriate ranges are set for each voice and text can be recognized with a single hand based on the measured data obtained from repeated measurements. A Bluetooth module is associated with Arduino UNO. The Processed data are then transferred to the Bluetooth module. The Android mobile also has an inbuilt Bluetooth capability. These two Bluetooth devices are then paired, and signal is transmitted to an Android gadget. Android portable gets information by means of Bluetooth. Finally Android mobile speaking and display text according to corresponding signal signals received by Bluetooth. This overall system is mounted over a normal glove for easy handling and recognizes the hand gestures accurately

ADVANTAGES

- To assist mute people in passing on their message to customary individuals utilizing hand movements and signals
- Easy to understand association with the client
- Simple to work
- Dependable for dumb individuals.

APPLICATIONS

This proposed framework is modest, cost proficient and versatile. This framework utilizes straightforward procedures .It helps not too sharp individuals in stamping territories, open divisions, working zones for speaking with others. This venture can likewise assume a significant job in different fields, for example, Robotics, Biometrics, Automatic control in businesses, Musical instruments by supplanting physical fastens and switches by hand motions.

CONCLUSION

The essential purpose of the endeavor is to reduce the correspondence opening between nearly deaf or calm systems and common people. This system is proposed to improve the lifestyle of bonehead/in need of hearing aid persons. This endeavor is also perfect for degrading the correspondence differentiation between the outwardly impeded individual and the simpleton person. Wherever all through the errand is fruitful and capable because it is using the arduino and android application.

REFERENCES

- [1] M. Dellira j, S.Vijayakumar "Design of Smart e- Tongue for the Physically Challenged People" 2013 International Conference on Recent Trends in Information Technology (ICRTIT)
- [2] L. K. Simone, E. Elovic, U. Kalambur, D. Kamper, "A Low Cost Method to Measure Finger Flexion in Individuals with Reduced Hand and Finger Range of Motion", 26th Annual International Conference of the IEEE Engineering in Medicine and Biology Society 2004 (IEMBS '04), Volume 2, 2004, pp. 4791-4794.
- [3] M. Wald, "Captioning for Deaf and Hard of Hearing People by Editing Automatic Speech Recognition in Real Time", Proceedings of 10th International Conference on Computers Helping People with Special Needs ICCHP 2006, LNCS 4061, pp. 683-690.
- [4] Syed Faiz, Ahmed, Syed Baber Ali, Saqib Qureshi, "Electronic Speaking Glove For Speechless Patients A Tongue to a Dumb", Proceedings of the 2010 IEEE Conference on Sustainable Utilization and Development in Engineering and Technology University Tunku Abdul Rahman 2010.
- [5] Jingdong Zhao, Li Jiang, Shicai Shi, Hegao Cai, Hong Liu, G.Hirzinger, "A Five-fingered Underactuated Prosthetic Hand System", Proceedings of the 2006 IEEE International Conference on Mechatronics and Automation, June 2006, pp. 1453-1458.
- [6] N. P. Bhatti, A. Baqai, B. S. Chowdhry, M. A. Umar, "Electronic Hand Glove for Speech Impaired and Paralyzed Patients", EIR Magazine, pp. 59-63, Karachi, Pakistan. May 2009.
- [7] B. Ali, S. Munawwar, B. Nadeem, "Electronic Speaking Glove for Speechless Patients", August 2010, Bachelor of Electronic Engineering FYP Report, FEST, H11T, Hamdard University, Karachi, Pakistan
- [8] N. P. Bhatti, A. Baqai, B. S. Chowdhry, M. A. Umar, "Electronic Hand Glove for Speech Impaired and Paralyzed Patients", EIR Magazine, May 2009, pp. 59- 63, Karachi, Pakistan
- [9] B. B. Edin, L. Ascari, L. Beccai, S. Roccella, J. J. Cabibihan, M. C. Carrozza, "Bio-Inspired Sensorization of a Biomechatronic Robot Hand for the Grasp-and-Lift Task", Brain Research Bulletin, Volume 75, Issue 6, 15 April 2008, pp. 785-795
- [10] M. Wald, "Captioning for Deaf and Hard of Hearing People by Editing Automatic Speech Recognition in Real Time", Proceedings of 10th International Conference on Computers Helping People with Special Needs ICCHP 2006, LNCS 4061, pp.683-690
- [11] T.H. Speeter, "Transformation human hand motion for Telemanipulation," Presence, Vol.1, no. 1 , pp.63 - 79,1992.
- [12] L.Bretznar&T.Lindenberg, "Relative orientation from extended sequence of sparse point and line correspondences using the affine trifocal sensor," in Proc. 5th Eur. Conf. Computer Vision, Berlin, Germany, June 1998, Vol.1406, Lecture Notes in Computer Science, pp. 141- 157, Springer Verlag.
- [13] Ruize Xu, Shengli Zhou, Wen J. Li, "MEMS Accelerometer based Nonspecific User Hand Gesture Recognition", in IEEE Sensors Journal, Vol. 12, no. 5, pp.1166-1173.
- [14] D. Xu, "A neural network approach for hand gesture recognition in virtual reality driving training system of SPG," presented at the 18th Int. Conf. Pattern recognition,

2006.

- [15] D. K. Sarji, "HandTalk: assistive technology for the deaf,"Computer, vol. 41, pp. 84-86, 2008.