Retraction

Retraction: Speaking system for speechless people using Flex sensors (J. Phys.: Conf. Ser. 1916 012201)

Published 23 February 2022

This article (and all articles in the proceedings volume relating to the same conference) has been retracted by IOP Publishing following an extensive investigation in line with the COPE guidelines. This investigation has uncovered evidence of systematic manipulation of the publication process and considerable citation manipulation.

IOP Publishing respectfully requests that readers consider all work within this volume potentially unreliable, as the volume has not been through a credible peer review process.

IOP Publishing regrets that our usual quality checks did not identify these issues before publication, and have since put additional measures in place to try to prevent these issues from reoccurring. IOP Publishing wishes to credit anonymous whistleblowers and the Problematic Paper Screener [1] for bringing some of the above issues to our attention, prompting us to investigate further.

[1] Cabanac G, Labbé C and Magazinov A 2021 arXiv:2107.06751v1

Retraction published: 23 February 2022
Speaking system for speechless people using Flex sensors

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Abstract. The most critical capacity of human beings is to interact (i.e., express their emotions, opinions and feelings) with each other. We cannot overstate the use of communications. In particular, it is very difficult for unspeakable people to communicate their meaning to ordinary people, since there are more than 300 sign languages, and it is difficult for an average person to learn and use these languages. As a result, unspeakable people face numerous irritations and frustrations that limit their ability to fulfill their regular tasks. Different psychiatric services are available to the muted population in order to get their speech back, but the expense of these treatments is costly enough that no one can afford them. Here we suggest a smart speech device that allows voiceless people to communicate their message to ordinary people using hand movements and gestures. The system uses hand motion reading with the aid of flex sensors along with a microcontroller (Aurdino) unit.

Keywords: Sign language, Smart glove, Flex sensors.

1. Introduction

This project is designed for one soul-purpose because speechless people can easily interact with others because they have their own sign language, but average people cannot understand it. Our project can allow them to easily communicate with others [1]. They can connect easily with each other using this system. So, in our project, the system uses a finger motion reading system fitted with a flow sensor and a Bluetooth module that can relay data to a mobile device, which is spoken out and shown simultaneously on the computer with the aid of the application [2]. Here, we use Aurdino microcontroller for hardware and operating system incorporating. The device consists of around 8 to 10 stored messages, such as "Support," "Danger," "Hungry" and so on, that unspeakable people convey their simple messages. The machine reads the orientation of the human fingertips for various differences in the action of the hand. Arduino continuously collects feedback sensor values and then processes it. Now looks for similar messages for a range of sensor values for a particular pattern. Once this message is located in memory, it is recovered and voiced using a smartphone application. In this application, we will customize sentences that should be spoken or presented on a mobile phone so that various age groups of people will profit from this one project [3].

2. Literature Review:
[4], this author uses a PCA algorithm to use Image Recognition Based Sign to Speech Translator for Stupid People. This would describe device limitations, interfaces and communications with other external applications. It would also clarify the purpose and the whole declaration for the evaluation of the framework. The proposed study's aim is to solve challenges of identifying skin color for the natural interaction among the users and system. Initiative is intended for people with disabilities and can help them communicate with others. In this device, a webcam is mounted in front of the visually disabled user. Physically disabled people position a finger with special action in front of a flex sensor. When you make a gesture, the camera tracks the precise location of your fingers and analyses the image using a theoretical part analysis algorithm. The collected coordinates will be mapped to the previously saved one, and the exact angle of the operation from the database will be calculated as a result. This project is therefore based on the Image Processing Domain and uses a PCA algorithm that is slow and not compatible with regular use. So, we're taking a step forward by using different analog signals to decode communications, which dramatically enhances speed and accuracy.

[5], Research is part of the Augmentative and Alternative Communications (AAC). This is a wired project that connects to an external computer for processing and viewing information. It consists of five flex sensors. Flex sensors are resistive sensors that adjust resistance by adjusting the bend's or curvature's curvature to analog voltage. Since these devices can only track hand gestures, some of the letters are not apparent because their movements are similar to those of other works. In order to improve the accuracy of the accelerometer, the hardware portion which measures the orientation of the hand has therefore been integrated. The Accelerometer will decide the orientation of the glove with respect to the ground. To calculate the inclination of angled gloves, it will be applied to the middle of the gloves. To detect x, y and z axes, the accelerometer uses a single structure. The output voltage of the accelerometer varies with respect to the Earth, depending on the inclination. Arduino NANO is the controller used in our build [6]. The built-in ADC that translates these analog inputs to digital output.

Here the software comes into action, the algorithm has some built-in data that matches input data and built-in data, and if matching is achieved, the particular message will be displayed or displayed.

3. Problem Identification:

Sign Language is the most interactive means for unspeakable people to communicate with one another. Common people, on the other hand, do not understand sign language, resulting in a significant difference between unspeakable people and regular people. However, owing to natural variations in the sentence, sign language is difficult to comprehend.

4. Proposed System:

We need the Flux sensors, the Gloves, the Aurdino microcontroller, the Accelerometer, the Bluetooth transmitter and the power supply for this project. The Flex sensor is essentially a variable resistor whose terminal resistance rises when the sensor is twisted. Therefore, this sensor resistance rise depends on the linearity of the surface. Thus, resistance increases as linearity improves. The interface of the flux sensors with the Aurdino microcontroller. The measurement instrument is directly attached to analog ports since the flex sensors achieve analog output. Aurdino NANO has an integrated ADC (Analog to Digital Converter) and is powered by a source of electricity. Now that the software program comes into operation, it transmits data through Bluetooth transmitter by comparing the flex sensor information, which is completely adjustable for simple and daily use. Finally, the display that is text and the corresponding sound is played on the cell phone. Figure 1 proposed system.
5. Advantages:
- It provides less expensive.
- Compactness.
- Flexible to the user.
- It needs lesser power to operate the machine.

6. Result & Discussion
The aim of this project is to convey the appropriate meaning in accordance with the glove gesture. We have also seen that the outputs of one of the lines of the subject's hand when wearing clever gloves, as well as the accompanying words, are displayed on the android computer. Along with, the Android app does the job by translating the captured text to speech signals, making them readable and understandable to the daily masses.

7. Conclusion
Sign Language is one of the recommended resources for facilitating communication between deaf and mute societies and mainstream culture. The feature character wishes to learn a sign language that is no longer possible, so our challenge is to eliminate such barriers. Gloves have proved helpful in converting their sign language signs to speech using an Android smartphone. In contrast to other approaches, smart gloves focus on decoding alphabet gestures. Smart gloves use precept function evaluation to identify real-time feedback statistics for position extraction.

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