ABSTRACT

Sign language is a means for deaf people to communicate, not many people understand about sign language, resulting in misinterpretation both people who do not understand or deaf people who are learning to communicate. The solution to this problem is to make gloves that can read and record finger movements. The glove requires a position control system to capture hand movements. This is so that the position of the fingers can be in accordance with the vocabulary delivered according to the Indonesian sign language system (SIBI).

In this research, designing, implementing, and analyzing the finger position control system on the gloves using the flex sensor on the prototype, the output of the finger reading system is displayed on web-based media. Input on the system is the ADC value from the flex sensor. The value in the input is defined as the position or gesture of each vocabulary that is delivered. Whereas on the web has the speech function Synthesis part of the web speech API is useful for conversion of words or letters into sounds. The output of the system is letters and sounds on the web that are sent from the microcontroller to the web through firebase.

From the test, the finger position control results have an average accuracy of 89% with a precision level of 90%, a recall of 88%, and an error of 10,81% making this system quite good in reading the position of the finger. The per-word delay measurement is used to measure the length of the initial word concentration of the destination word, having an average delay of 3.26 seconds per letter. QOS measurements on the web have an average yield of 2.75, according to the TIPHON these results are in the good category.

Keywords: Sign Language, Gloves, Flex Sensor