Sign E-Glove

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Abstract: *Speech is the easiest way to communicate in the world. It becomes difficult for speech-impaired people to communicate with normal people as they use sign language for communication. When a speech-impaired person communicates with a normal person, the bridge gap between speech-impaired and normal masses is too much to fill. Gesture recognition can be done in two ways, Image processing-based, and sensor-based. The objective of the project is to design a smart glove for sign language translation that helps an easy way of communication for speech- impaired or hearing-impaired people. In this project, gloves need to be equipped with sensors such as Flex sensors which sense different sign language gestures. Flex sensors are placed on fingers that measure the bending of fingers according to a gesture made. The sensed data from sensors is sent to ESP32 microcontroller board for further processing and the data we get will be displayed on LCD display in the form of text. This text data is then converted into speech through APR module and audio will comes out through speaker. During emergency conditions, push button on the gloves needs to be pressed by disabled person such that ESP32 will send a message called "Emergency" to the normal person's phone through Wi-Fi. Since it is a duplex mode model, the normal person can send some messages by Blynk App to the disabled person and ESP32 captures the messages and display them in LCD display*

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