

Samir Berrada

*The Future of Sign Language Translation and Universal Digital Control*

My project's main focus is to allow people disabled by deafness or muteness to communicate with other people who have no knowledge of sign language. The way I planned to accomplish this was by the means of a glove outfitted with various sensors and some clever software. Besides successfully reaching this goal, I managed to install another useful function into my project - the ability to directly control things such as robots and household appliances, although for demonstration purposes I only created a robot. The methods I used to create the fully functioning glove included sewing flexibility sensors onto each finger of the glove, building and attaching circuitry to both the glove and the receiving ends (the display and the robot), and also integrating an accelerometer, a gyroscope, and a compass. The flex sensors were the primary means of translation, and the last three sensors I mentioned (the accelerometer, the gyroscope, and the compass) were also used for the purpose of translating, but were mostly for controlling the robot. Of course, I first had to test all the sensors in order to calibrate them and essentially see if they worked properly, and the means by which I did this was a matrix of LEDs (light emitting diodes) and also a terminal program on a computer. I strongly believe that this glove will be very beneficial to mankind in the near future and will bypass the normal limitations that one disabled with a lack of hearing or sound may encounter.