Abstract

This project involves the creation of an input device that the user shall wear on their right hand and arm. Said device will measure the bend of the digits as well as the motion of the hand. It will then transmit a signal which corresponds to a known input wirelessly using Bluetooth technology. This signal shall be received by another Bluetooth device which shall interpret it accordingly. Such uses of this technology could include, but are not limited to: Computer input (e.g. mouse, keyboard, game controller), Human assistance (e.g. interpretation of sign language, control of a wheelchair), or control of a Bluetooth controlled vehicle (i.e. an RC Car).

Major Components

- **Arduino:** ATMega 2560
- **IMU:** Triple Axis Accelerometer and Gyro Breakout
- **Bluetooth Module:** Bluetooth Modem—BlueSMiRF Silver
- **Flex Sensors (x10):** Flex Sensor 2.2” by SpectraSymbol

Features

While the glove can be configured to control almost anything that can connect via Bluetooth, the glove is currently configured to translate American Sign Language into keyboard presses. This was chosen as the optimal method to display the components of the glove as a whole working together. Each letter is represented by making the signs designated below with the hand. The glove then performs calculations using the sensor inputs and converts these into a keyboard scan code which is then sent via Bluetooth to the computer, which interprets this as a key press.

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