Prototyping a Portable, Affordable Sign Language Glove

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Abstract : Communication between speakers and non-speakers of American Sign Language (ASL) can be problematic, inconvenient, and expensive. This project attempts to bridge the communication gap by designing a portable glove that captures the user's ASL gestures and outputs the translated text on a smartphone. The glove is equipped with flex sensors, contact sensors, and a gyroscope to measure the flexion of the fingers, the contact between fingers, and the rotation of the hand. The glove's Arduino UNO microcontroller analyzes the sensor readings to identify the gesture from a library of learned gestures. The Bluetooth module transmits the gesture to a smartphone. Using this device, one day speakers of ASL may be able to communicate with others in an affordable and convenient way.

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