HandTalk “Talk to the Hand”

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Purpose

- There is no fast and convenient way for a deaf person to communicate with someone who does not understand sign language.
- To solve this problem, we have created a glove which converts hand gestures into speech to bring down these barriers of communication.
- HandTalk is fully extensible – anyone can reuse our gesture recognition platform for other applications.

Usage

1. Sign
2. Recognize
3. Speak!

Results

- Prototype can successfully recognize signs defined by user.
- Enables a user to vocalize a word without actually speaking.
- Gesture Recognition can activate any action programmed by developer.

Architecture

Glove

- Flex Sensors
- Raw Signal

Bluetooth Data Acquisition Module

- A2D
- Bluetooth Module
- Quantized Data

Nokia N95

- Bluetooth Module
- Text → Speech Engine
- Gesture Recognition
- Translated Gesture

Competitive Advantage

- **Portable**: The HandTalk glove is lightweight, has low power consumption and can be easily removed and stored when not in use.
- **Wireless**: HandTalk utilizes Bluetooth technology to provide a clean solution.
- **Cheap**: HandTalk uses off-the-shelf existing technology and the user’s cellphone making it cheap to manufacture.
- **Low-profile**: HandTalk uses very low profile sensors which keep the glove sleek and form-fitting.

- **Versatile**: HandTalk’s flexible platform can be redeploied for a variety of purposes:
  - A Medical Diagnostic Device to measure hand dexterity
  - Command issuer in military field operations
  - Sign language trainer
  - Mobile gaming