



Senior Design Project Proposal

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1. Project Title: **Hand2Speech: wireless glove for sign-to-speech or gaming applications**

2. Project Description:

The goal of this project is to develop a wireless glove designed to recognize basic American Sign Language (ASL) hand signs and generate speech for them. This could be done by interfacing the glove with a PC, laptop or other portable devices (cell phone, PDA, etc.). Other applications may include basic controls utilized in games.

3. Project Design Objectives:

The following are the main steps.

1. The design of the wireless node attached to the glove. This node will interface with accelerometers attached to fingers of the glove and with the main base (gateway node) attached to the PC via the USB port.
2. The development and implementation of algorithms for sign to voice conversion.
3. Once both the hardware and software start working together, we will test the system.
4. Maintain a project website.

4. Project Prerequisites:

Some experience with programming in C/C++. Basics of signal processing and communication. Knowledge of Matlab would be a plus.

Most importantly, students should be self-motivated to learn new interdisciplinary approaches that bridge knowledge and skills from electronics, wireless communication, signal processing, and programming.