Lone Sorcerer: An American Sign Language Driven Quest

Introduction:

The Gallaudet Research Institute (GRI) estimates that more than one in every five hundred individuals is “functionally deaf.” American Sign Language (ASL) is the most common language in the North American Deaf community. We are building a fantasy adventure game where the interaction is driven by ASL gestures.

Goals:

The goals for the system are three-fold:

- To demonstrate that ASL can be utilized as a structured gesture command language to drive computer applications.
- The game can act as language practice for Deaf children.
- The Lone Sorcerer may demonstrate to both the gaming industry and gamers that ASL can be a fun and novel interaction method.

Description of Solution:

We have designed, implemented, and will test the usability of a fully ASL-driven fantasy adventure game called the Lone Sorcerer.

Plot:

The game is centered on the user’s character that attempts to take over the role of his wizardry teacher as the protector of his lands. After initially learning how to spell-cast, the player must make use her/his spells and problem solving ability to destroy the Witch and her minions that torment the town.

Game-Play:

The Lone Sorcerer has been designed for a full range of gaming and computing experience. The system includes predictive automatic hints and static help that respond on the users request. The user moves using a joystick and uses ASL gesture commands to command the character. All feedback to the user is either iconic or descriptive ASL videos.

Wizard of Oz Interface:

To ensure that we separate the human factors issues from the ongoing research and development of the recognition system, a “Wizard of Oz” (WOz) interface has been implemented to command the game while the recognition system is trained and improved. The WOz interface has been built to allow the Wizard to quickly choose commands and send them to drive the game in lieu of the recognition system.
Discussion:

The game will be used as mechanism to train the backend ASL recognition system. Also, an evaluation will be conducted of both the user interface and user experience to elaborate on how to design a system that is ASL gesture driven. Finally, the research will demonstrate a new interaction method for both gamers and the computing community at large.

The *Lone Sorcerer* will attempt to elucidate a better understanding of how to design software driven by ASL.