Name(s)	Project Number
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Project Title

Natural Human Interface for Technology

Abstract

Objectives/Goals
An easier way to interact with technology.
A more natural interface for a user.
Elimination of keyboard, mouse or remote control.
Reduce amount of key commands needed to complete a task.
Simple use of phone, computer or TV, etc.

Methods/Materials
Researched natural interfaces to technology including multi-touch, speech recognition and artificial intelligence.
Researched multi-touch interfaces and how they worked.
Found several different methods of multi-touch.
Found multiple examples of speech technology and artificial intelligence on how to recognize speech.
Decided to use a rear projection television and modify it to use multi-touch. Added microphones to recognize speech.
Used lasers and IR camera to map touch points on the screen. Filtered out regular light except UV and IR light.
Installed computer software to demonstrate ease of use.

Results
Successfully modified a rear projection TV with IR lasers, then modified my play station eyecam to recognize IR light. Configured and aligned lasers and cameras in order to map touch points on the screen. Created a touch interface on the screen. Physical touch deflects light which is then seen by the camera which causes an action. Created one touch option to connect with speech recognition using artificial intelligence to complete additional actions by voice command.
Now I can touch, talk and see my results.

Conclusions/Discussion
Human touch is a much better way to interact with a computer, TV or phone.
Speech recognition eliminates the need to memorize which buttons to push.
Technology in the future should use a combination of multi-touch and speech to create a better interface.
Reducing steps makes technology faster and fun.

Summary Statement

The future of technology is the ability to touch, speak, and see.

Help Received

My dad help with purchasing the parts need. My mom helped with the presentation board.