March 4, 2010

ENGR110/210
Perspectives in Assistive Technology

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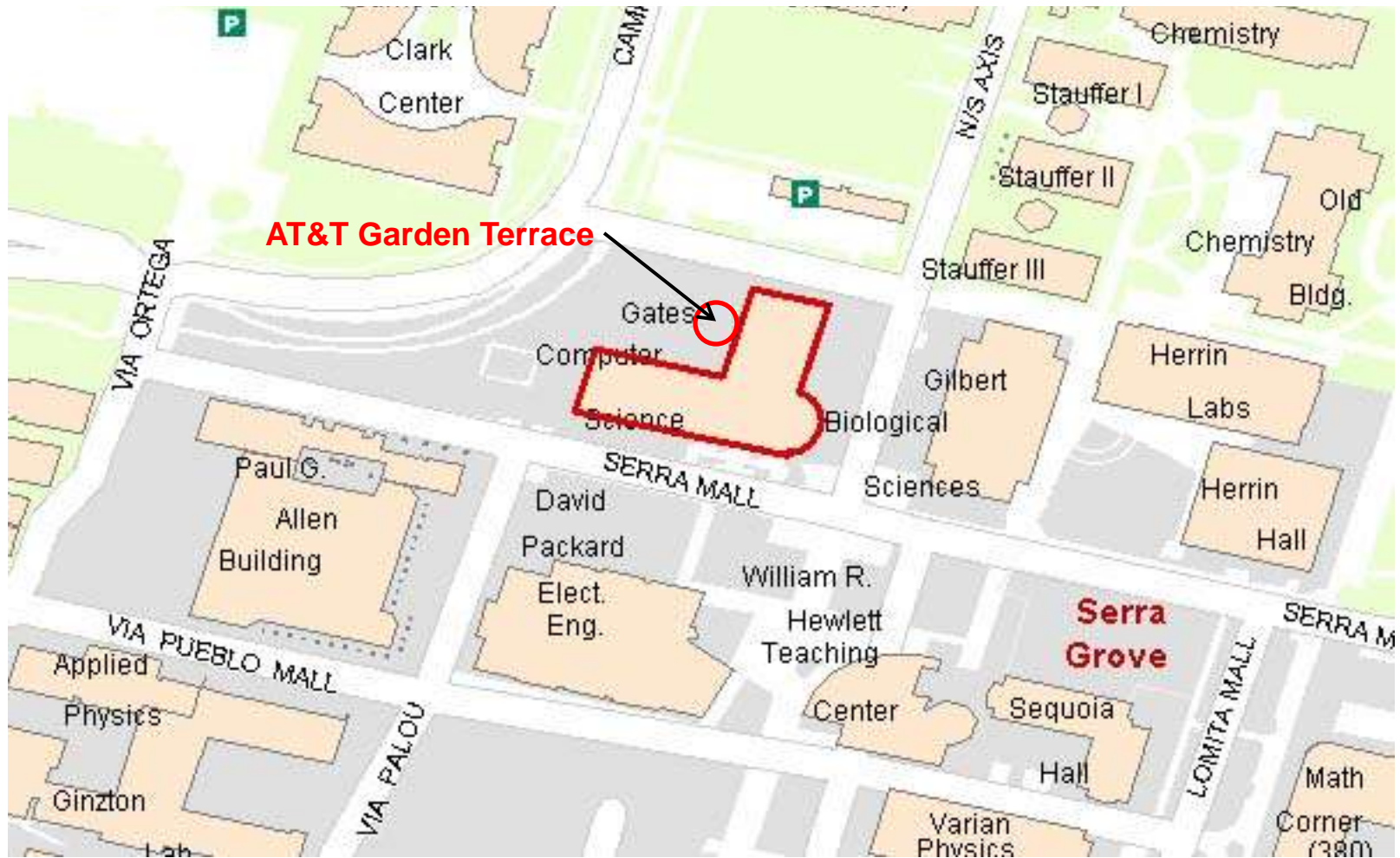
Questions, Comments, Thoughts?

Sign Up

Course Celebration:
Thursday, March 11th

AT&T Garden Terrace

14 tech tools that enhance computing for the disabled
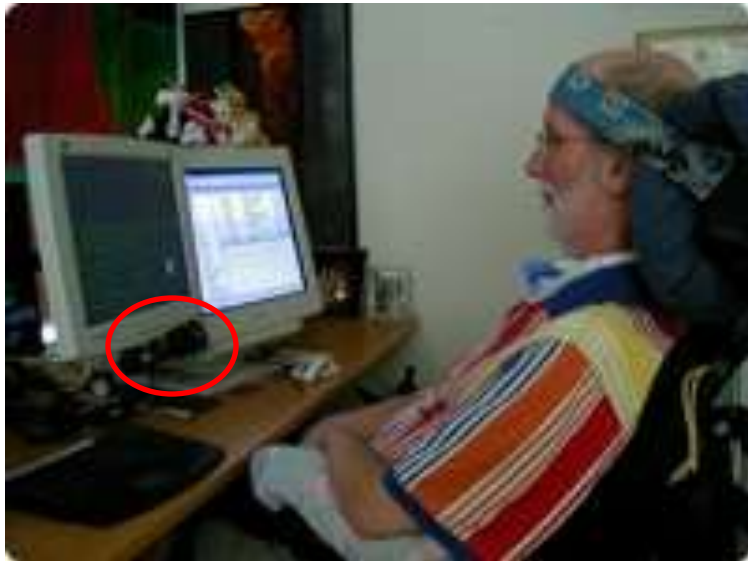
Computerworld

February 15, 2010

Impulse Electromyography

AbleNet's Impulse is an EMG (electromyography) sensing electrode that senses tiny muscle contractions. Using its patented technology, the device detects and wirelessly transmits the EMG signal to a computer using Bluetooth. Impulse's software then processes the activity as a traditional mouseclick. Pairing the Impulse with popular accessibility programs such as EZ-Keys allows users to fully control their computer with the smallest of muscle activity. $2100

Eyegaze Edge Eye-motion Sensor

The Eyegaze Edge from LC Technologies uses a high-speed infrared camera mounted under the system's monitor and a small external processing unit to translate eye position into on-screen action. $7250

Jouse2 Sip and Puff System

In addition to being a USB mouse replacement, Compusult's Jouse2 acts as a keyboard replacement with the company's JoyWrite software, which lets users control the text cursor and enter individual letters, numbers, and punctuation by combining sips and puffs of air. Jouse2 can also translate Morse code commands into letters, where sips are dots and puffs are dashes. $1400

SmartNav 4 Head-position Detector

NaturalPoint's SmartNav 4 works by sensing a small reflective dot that can be stuck to the user's forehead, eyeglass frames, hat, or headset's microphone. SmartNav detects head motion of the head to move the on-screen cursor. Users can type using a virtual keyboard. Actions such as clicking, right-clicking, and dragging are controlled with a special toolbar. $500
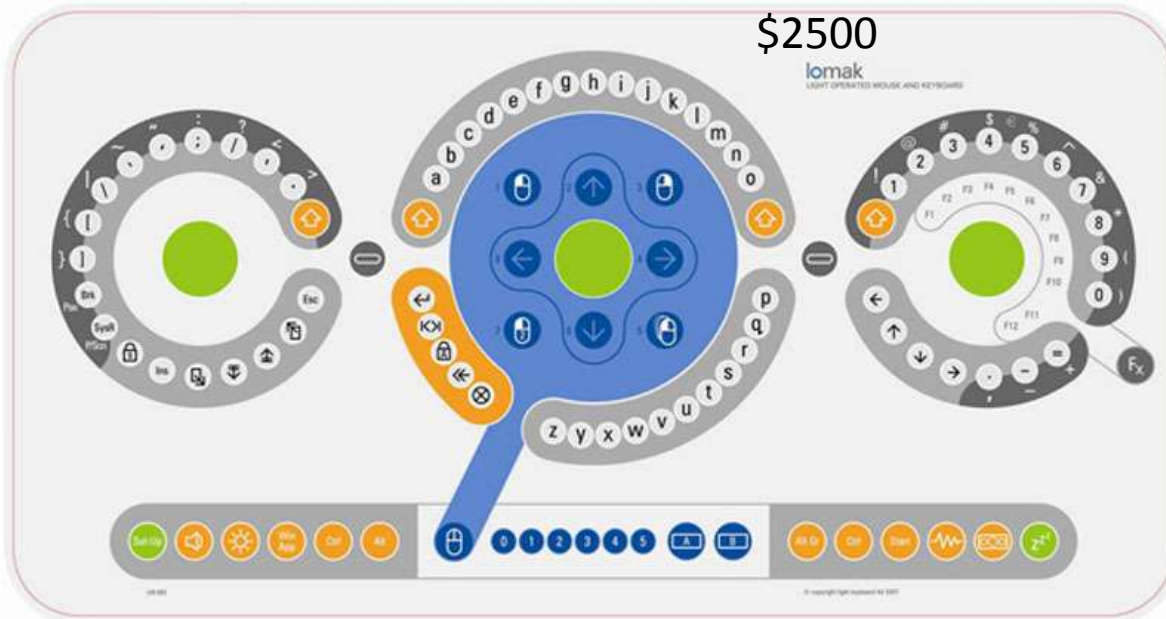
Camera Mouse 2010

Camera Mouse replaces the Windows mouse software with a free software application that tracks the head's movements with a standard webcam (either built in or externally attached via USB 2.0).

Lomack

Lomack is a light-operated mouse and keyboard. A hand or head pointer controls a beam of light that highlights then confirms the key or mouse functions on the keyboard. By confirming each key, only the correct selection is entered, which reduces errors and increases input speed.
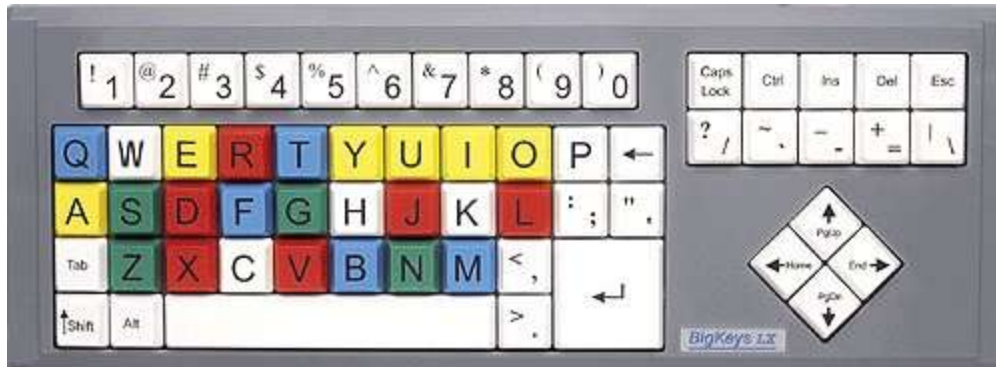
$2500

NoHands Mouse

The NoHands Mouse functions as a two- button mouse. One pedal is for cursor control, the other is for clicks. $350
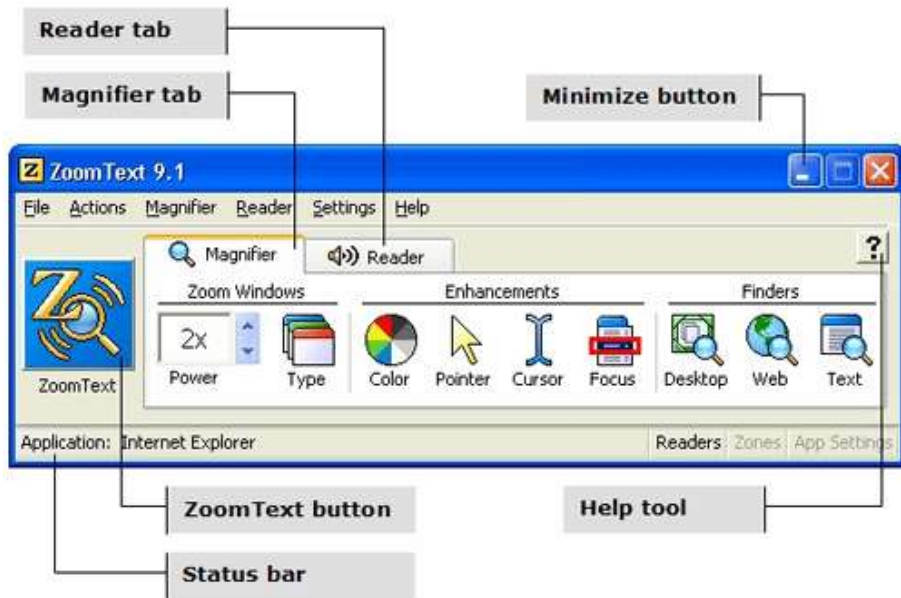
BigKeys LX Keyboard

The BigKeys LX from Greystone Digital is a novel take on the standard keyboard, with large keys (1-inch square) and labels. $159

ZoomText Screen Magnification / Reader

AI Squared's ZoomText Magnifier / Reader can blow text up to 32 times its original size and display it in a variety of ways. It can also read what it sees on the display - including documents, e-mails, Web pages, application menus and so on - aloud to you with its synthetic speech processor. The program can be configured to read back characters as they're being typed. $600

InfoScan TS Elite Scanning Pen

Optical scanning head to scan printed text

5-way button for easy navigation

View scanned text and translation on a high resolution touch-screen

Hear scanned text read aloud through the built-in speaker

Earphone socket for private listening

USB cable outlet

Stylus slot

Stylus

WizCom Technologies' InfoScan TS Elite scanning pen scans and stores printed material and reads it back. It glides over the page and can hold up to 500 pages of material internally that can be transferred to a computer via a USB cable for further work or editing. It has a built-in American Heritage Dictionary and can work with type that's between 6 and 22 points, in English, French, German, Portuguese, or Spanish. The pen scanner costs about $150.

Intel Reader

The Intel Reader can enlarge the text on its 4.3-in. screen while a synthesized voice reads the material. The Reader can be loaded with material from a Windows PC or a Linux system via a USB cable, or just aim the device's 5-megapixel camera at your document to enlarge and read spreadsheets, memos, or pages from a report. $1500

Braille+ Mobile Manager PDA

The Braille+ Mobile Manager from the American Printing House for the Blind has a 60GB hard drive and a powerful processor, it weighs just 7.4 oz. and can go anywhere. The $1,395 device has a Perkins-style Braille keyboard so users can type in notes, appointments and contacts; there's also a voice recorder for oral memos. Anything in the Mobile Manager's memory can be read to the user with the device's synthetic speech engine or sent to a computer via built-in Wi-Fi and Bluetooth. It is compatible with Word files and can surf the Web, play music, play games, and read books aloud.

BrailleNote Apex

In place of an LCD screen, HumanWare's Apex has a 32-cell tactile Braille display that are "read" by the user. The Apex offers 8GB of internal memory, a high-capacity SDHC card socket, three USB 2.0 ports, a GPS receiver, and Bluetooth, Wi-Fi, and Ethernet connectivity. The device is less than an inch thick and weighs 1.8 lb. The included KeySoft Suite can help individuals who are visually impaired type a memo or paper, do online research, send instant messages, or record a meeting to keep up with a typical day at work or school. $6,200

soundAMP Amplification Application

An iPhone and iPod Touch application, Ginger Labs' soundAMP with its sophisticated audio-processing software, can amplify words while filtering out background noise, helping make audio more comprehensive in meetings, noisy cubicles, or elsewhere. A sound-level meter lets the user adjust the volume or tone to suit the environment. The sound can also be muted. It can playback the last 5 seconds of material from its memory. $10

Tuesday

Student Team Project Final Presentations

**Team Quadruped:
Kane's Cane Project**

**The Rechargers:
Medtronic Vest Project**

Stanford News

Today

Rich Mahoney, PhD
Robotics Applications

Adjourn