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Assistive Technology Lab "Speaks Up"

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Computers operated entirely by speech? It's a working reality at UF's Assistive Learning Technology (AT) Lab, which on Sept. 6 celebrated an expansion move from Peabody Hall to Norman Hall, and the acquisition of several new systems to help disabled UF students, faculty, and staff.

The majority of AT resources are designed to let persons with disabilities interact with computers and the data and resources available through computers.

Some utilities -- including screen-image magnifiers and software to make keyboards easier to use -- are available on many networked machines in public computer labs.

Other systems are available only in the AT lab for now, while Don Grossman, the unit's leader, pursues site license agreements. Some disability solutions are still experimental. These include two campus navigation aids, one of which uses GPS-satellite repeaters for real-time geographical positioning (2 meter accuracy) in guiding blind persons to various UF campus destinations. Don Grossman comments, "A blind person using that system carries a miniature GPS receiver hooked to a notebook computer that speaks directions into an earphone plug."

The second program has a built-in map with most every street in the state of Florida. Using keyboard input or voice recognition, the traveler gives his or her current location and intended destination, and the software provides the best route and block-by-block directions.

One newly installed program is "JAWS" for IBM Windows. JAWS helps blind or visually impaired computer users navigate the Windows interface by reading aloud menu selections and commands executed by the user, as well as on-screen text. It also reads HTML, so it's possible to navigate the Web with JAWS and a browser by tabbing from one link to another. Modern "screen reader" applications such as this rely on a standard sound card with a DEC chip that synthesizes speech. An earlier version of JAWS at the lab uses DOS on an old IBM PS2, yet does a creditable job of synthesizing human speech "mechanically."

Communicating with a computer solely by voice is no longer science fiction. Early implementations have given way to programs that will, with training, recognize 100 words per minute text input, and easily recognize user commands. The AT lab has workstations using
Power Secretary (Macintosh) and DragonDictate (IBM). "The more you use (DragonDictate), the better it gets," Grossman said, "because it's in a continuous learning mode—although you might not want to do what I did initially -- I used it a lot when I had a cold, and when I got better, the recognition went downhill!"

Stacie Slaughter, a senior in Special Education with a learning disability and a hearing impairment, was spending her first day with Openbook Unbound, a product that takes scanned text, puts it on-screen, then reads the text out loud, highlighting each word as it speaks it. The AT lab uses a standard flatbed scanner to scan the text, and runs the program on a 33 MHz IBM machine with a Sound Blaster card.

"It is really accurate pronunciation -- more accurate than human book readers I've used before," said an impressed Slaughter. "Although once in a while, it will mispronounce a word (the software confidently pronounces "UF" as "OOOF"), and I'll start laughing."

Slaughter said the combination of hearing the text and reading it on-screen simultaneously is a tremendous comprehension aid for her.

A similar tool is the Kurzweil reader, a stand-alone unit that scans books and reads them back to the user. The Kurzweil lets you adjust the read-back rate from 100 to 550 words per minute. It also offers adjustable pitch, a choice of nine different reading voices, and the ability to scan to disk in space-saving ASCII format.

Still another new development is the use of CUCMe ("See You, See Me") software and inexpensive videocams to provide interactive distance education to home-bound academicians.

The AT lab also has a computer that accepts text files and outputs them on paper in braille. The ability to output line art (such as graphs) in braille is being developed. For more information about the AT lab, please email Don Grossman at dragon@condor.circa.ufl.edu [mailto:dragon@condor.circa.ufl.edu] or call him at 392-3025.

Your Comments are Welcome

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