



Yes we can... connect!

New invention helps people with disabilities bridge the distance gap

Left to right, Spalteholz, Chou and client Ann Jacob, who is using the CanConnect system to talk to a relative.

Reaching out to touch someone now has an entirely new ring to it, thanks to CanAssist, the University of Victoria's assistive technology team.

Seniors and people with cognitive and other disabilities can now connect around the globe to family, friends and peers with just one touch of a computer screen or click of a mouse button, with no or minimal help from an assistant.

CanConnect is a simple Skype interface that is adaptive and intuitive, allowing users to make free telephone calls and have face-to-face chats in real time over the Internet. It's designed for people who have minimal if any computer knowledge or for those who are unable to use a mouse or keyboard.

"The idea arose because of an expressed need from one of our clients whose elderly mother has dementia," says CanAssist director Dr. Nigel Livingston. "This Victoria resident was experiencing significant personal despair due to her inability to readily connect with her 92-year-old mother in a nursing home in Tennessee. Now she can."

Established at UVic in 1999, CanAssist develops technology, programs and services that improve the quality of life for clients with special needs. It responds to community requests from across Greater

Victoria, BC and around the world.

"Everyone, regardless of the challenges he or she may face, deserves to be given every opportunity to participate fully in life and contribute to society," says Livingston. "Our mission is to improve the quality of life of those with disabilities worldwide."

CanConnect employs common assistive technologies such as touch screens, single-switch one-click devices, muscle-movement sensory headbands and eye-tracking devices.

The basic configuration presents users with a gallery of photos of contacts—typically three or four—and when one of these contacts is online, the picture is enlarged and placed in the centre of the screen. To establish contact, the user simply touches the screen, hits a button or moves a muscle, such as an eyebrow.

"CanConnect enables our special-needs clients to be connected with family and friends, reduces their social isolation and empowers them with technological independence," says Ann Chou, an undergraduate student in computer science and health information science.

Chou spent a four-month co-op term with CanAssist, testing CanConnect prototypes, liaising

with prospective users, implementing new feature requests and fixing any technological problems. In the process, she saw first-hand the impact that technologies such as CanConnect can have on people's lives.

"One client was so enthusiastic after she got her customized keyboard and software that she used the technology to call our team several times the same afternoon it was installed," she says.

The initial version of the CanConnect program was developed by Leo Spalteholz, a graduate student in electrical and computer engineering and CanAssist's manager of software. He points out that the system can also enhance the receiver's experience.

"Being able to see someone, as well as talk, can add so much to a conversation," he says.

The CanConnect project was initiated in November 2008 and is now in the testing stages. "We're optimistic this technology will be adopted by users around the world," says Livingston. "Certainly, we'll do everything we can to make that happen."



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CanAssist harnesses the ingenuity of faculty, students and staff from virtually every discipline at UVic, as well as volunteers from the community. For more information visit www.canassist.ca.

Through CanAssist, UVic students get extraordinary experiential learning opportunities. More than 2,200 UVic students have participated in CanAssist projects as part of their course work, through co-op work terms, as graduate students or as volunteers.

CanAssist clients range from visually impaired children to adults with advanced neuromuscular degenerative diseases such as multiple sclerosis and ALS.

Projects include tricycles for children with physical and visual impairments, wheelchair and walker accessories, and eye-tracking communication systems for people with especially challenging disabilities. CanAssist only develops devices or programs that are not available commercially or through other service providers.

To date, CanAssist has developed more than 140 innovative technology solutions and provided direct assistance to many hundreds of clients.

UVic researchers were awarded more than \$106 million in outside research grants and contracts in 2007/08. This more than doubles the research support of five years ago.



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