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TORONTO STAR

Name: Mike Wu.

Age: 28.

Program: PhD candidate in computer science at the University of Toronto.

Thesis: Developing electronic memory aids.

The project: Wu works with amnesia patients at Toronto's Baycrest medical centre to find ways they can trigger their memories when they become disoriented. "People with severe memory impairment have difficulty remembering faces, names and events," says Wu.

The issue: In order to keep things running smoothly, amnesia patients tend to structure their lives according to very strict routines, says Wu. When something happens to disrupt that routine (say, a TTC delay on the way to a doctor's appointment), a patient can become confused and disoriented, unable to remember where they are and what they are doing.

A possible solution: When working with amnesia patients and their families, Wu discovered that they wanted vital written information to refer to when confronted with a strange situation. "The tool they wanted was something that they could take out when disoriented and they could press a button to get information about the situation." Software can program the personal digital assistant, or PDA, with instructions from family or caregivers to suit the amnesia patient's needs, and let them record their whereabouts when disoriented.

The patients: Amnesia can happen to anybody. The patients at Baycrest have lost their episodic memory from head injuries caused by accidents as well as strokes and brain aneurysms. Their ages can range from young adult to the elderly, though Wu finds the average age of patients he works with at Baycrest is around 40.

User participation: Six amnesia patients in Baycrest's Memory Link program work with Wu and a neuropsychologist to tailor the palm PDAs to the needs of people with episodic memory loss. "So they're designing memory aids to help themselves," Wu says.

Wu hopes to develop the software so a family member or caregiver will be able to access the system through another PDA or computer and wirelessly share calendars and messages.

Why it works: Amnesia is very selective in the brain functions that it affects, says Wu. It doesn't impair intellect, so it's possible for amnesia patients to eventually learn new skills, such as using a PDA. "They just won't remember how they learned to use the device," Wu says.

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