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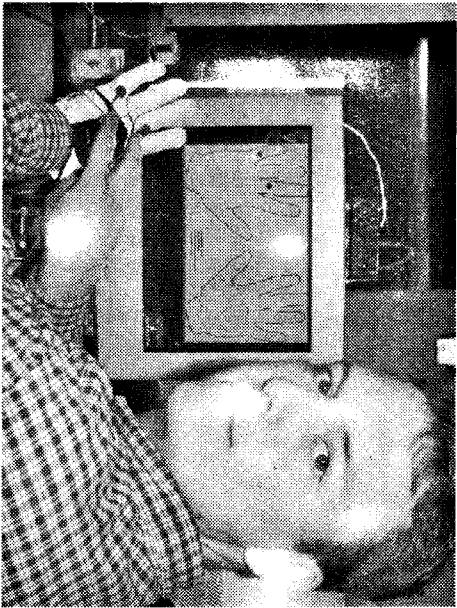
Glove helps visually impaired see through touch

By LYNN JACKSON
Guelph Tribune

Sam Bromley is very busy these days. The 26-year-old University of Guelph PhD student is inventing a glove that will help the visually impaired see through touch.

Along with Prof. John Zelek, of U of G's department of Engineering Systems and Computing, Bromley is designing the glove, complete with motorized sensors on its fingers, to help visually impaired people sense obstructions within 20 feet in front of them. Visual information is gathered by two cameras that act as eyes, worn on the front of the body. If the cameras see an upcoming obstruction, they signal vibrations to the glove to forwarn the person.

Sound complicated? Bromley admits it's not an easy task. "It's a lot of work," he said. "I've done a lot of reading on research that's been done on psychological and sensory studies in order to design the layout of the glove. Your hand is one of the



University of Guelph PhD student Sam Bromley is busy engineering a glove to provide visually impaired people with an improved system of navigation.

TRIBUNE PHOTO BY LYNN JACKSON

most sensitive parts of the body for recognizing spatial resolution," he said, adding a whole array of technical jargon. "I need to find a way to get the computer to understand what it's seeing and how far away things are and, most importantly, how to communicate that information to the blind person in such a way that they can safely and comfortably navi-

gate their environment," said Bromley. "Ultimately, I'd like to be able to say that you put the glove on and you know where stuff is," he said. Bromley, who graduated from Memorial University with a degree in Applied Mathematics and Physics, said he was looking to work on a project that had some practical applications —

something that could make a difference in people's everyday lives. While perusing the internet, he read about the research done a couple of years ago by Zelek and students under his instruction at the University of Guelph, though at the time the project was only in the conceptual stages.

Bromley said his interest was piqued and he applied to do his PhD at U of G. In his initial meetings and discussions with Zelek, Bromley was presented with the idea of creating a prototype for the concept.

Bromley started work on the glove last September and figures it will take at least the usual three-year PhD term to get a practical, usable system together, he said.

Then will come the rigorous testing carried out by the Canadian Standards Association and various other safety organizations before the glove can be used publicly.

Though some preliminary testing has been done with visually impaired subjects, the project is sched-

uled for the fall, said Bromley.

"In the end, it's the user who decides whether or not this system will work," said Prof. Zelek in a news release, adding that members of the Waterloo office of the CNIB are eager to try out the prototype. Though Bromley says the materials for the prototype have cost between \$600 and \$700, he said if the design is approved, the cost could be lowered by purchasing materials in bulk and mass-marketing the product.

Once the device is fine tuned, Bromley said it could have a number of other practical applications, such as including keeping truckers alert on the road and helping them see their blind spots.

"I'm really excited about it (the project)," he said. "You know you're doing the right thing when you wake up in the morning and you can't wait to get to work."

Those who would like to check out the project online the address is: www.uoguelph.ca/~bromley.