Watching you, watching me

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Wearing what looks like big sunglasses, Connor Dickie peers around a seemingly unremarkable room full of computers. What he sees is displayed on a screen beside him, and when he makes eye contact with a visitor for a few seconds, the computer begins recording what he sees.

Minutes later, with a few clicks of the computer mouse, Mr. Dickie posts the digitized video clip on a website.

The room is the Human Media Laboratory at Queen's University in Kingston, Ont. The high-tech glasses, called an eyeBlog, are among the projects Mr. Dickie and other student researchers are working on as part of a mission that Dr. Roel Vertegaal, the lab's director, describes as making technology more aware of people.

Dr. Vertegaal set up the operation in May, 2001, a year after joining the Queen's faculty. Funding -- $200,000 to $250,000 a year -- comes from Communications and Information Technology Ontario, the Natural Sciences and Engineering Research Council (NSERC), and sponsorships from private companies including Microsoft Corp. and Smart Technologies Inc., a Calgary-based maker of collaboration tools. About a dozen students work in the lab.

The Human Media Laboratory aims to commercialize some of its developments through a new spinoff company, **Xuuk Inc.** The company's first product is the $799 (U.S.) eyeBox, a USB digital camera that senses when people are looking at it, and that can be used to control programs through head and eye movements. It also plans to bring eye-contact sensors to market that can be stuck to an object to detect whether someone is looking at it. Dr. Vertegaal says potential uses include psychological experiments or safety provisions, such as ensuring a machine is being monitored or a driver is alert.

Mr. Dickie's eyeBlog uses similar technology. The glasses contain a camera and a sensor that detects when beams of infrared light are being reflected off a nearby person's eye. The tiny camera begins recording video when the sensing device determines that the wearer has been face-to-face with someone for 10 seconds. Though the eyeBlog in the lab transmits video to a nearby computer over a radio link, a fully

portable version can record video to a handheld computer small enough for the operator to carry.

The eyeBlog is designed for an emerging activity known as video blogging. Blogs -- short for weblogs -- have become a popular way for people to post their thoughts, along with links to other websites, and invite comments. Video blogs are a logical extension of text-based blogs, and the eyeBlog is a tool designed to make it easy. By recording automatically when the wearer makes eye contact with someone, the eyeBlog produces video clips that need little or no editing before being posted, Dr. Vertegaal says.

Mr. Dickie, a former film student now studying computer science, knows first-hand the work that goes into preparing video for an audience. The beauty of the eyeBlog, he says, lies in allowing the filmmaker to participate in the action.

The device could have other uses too, such as recording the interaction between people -- say, a police officer's contact with citizens or suspects. And Dr. Vertegaal is talking to researchers about using the eyeBlog to help treat autism, a developmental disorder affecting social interaction and communication. People with autism have difficulty making eye contact with others, he says, and an eyeBlog could track their ability to do so.

The eyeBlog is just one of the projects under way at the Human Media Lab. In another project called the Attentive Cubicle, an overhead camera observes the movements of people sitting in adjoining cubicles. If both turn to face the partition that divides the cubicles, the normally opaque divider becomes transparent (it uses privacy glass, based on liquid-crystal technology) and their headsets shut off to allow them to talk.

"You could say," Dr. Vertegaal says, "we're trying to develop more sociable computers."

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