High-tech in service of others

JAMES GIPS | G FORCE

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WHO

James Gips

WHAT

The Egan Professor of Computer Science at Boston College has developed a technology to allow people — most with severe disabilities — to control a computer mouse with head movements.

Q. Your free, downloadable computer program Camera Mouse seems to be going viral on the Internet.

A. We first posted it in June 2007. In the first 31 months, 100,000 copies were downloaded. In the next 12 months, another 100,000. And last month, 100,000 were downloaded.

Q. And all those people have such severe disabilities that they can't use a conventional mouse?

A. Many of the people who download it do have severe disabilities. Others are interested in a new way of interfacing with the computer. There are people in financial markets, or physicians with gloves who don't want to touch the computer because it would ruin the sterilization.

Q. Do you keep data on who uses it and why?

A. We do not keep track of the use patterns. One of our big challenges is simply convincing people that we have no ulterior motive. That we're trying to help people. One of the ways we show that is by not having the program trying to access the Internet in reverse.

Q. So, how do you know whom you are helping?

A. We get lots of testimonials. Here's one from South Carolina. "Having ALS, and not being able to move my arms, Camera Mouse has changed my life." And a 30-year-old woman in Melbourne wrote that she uses Camera Mouse to do music blogs. Now, she can write about music.

Q. How did Camera Mouse come about?

A. I had, over 15 years ago, developed a technology called Eagle Eyes, which uses electrodes to track eye movements and control the computer. Halfway there, we were tracking the head, and I thought this by itself would be a worthwhile technology.

Q. And now you give it away for free?

A. As a service. BC's core values are "ever to excel" and "men and women for others," and this seemed to be consistent with those values. It just seemed like the right thing to do.

Q. Any regrets that you are not making money off the technology?

A. I'm very pleased with the way this has all turned out. I'm richer in spirit.

Q. Your Eagle Eyes program helps people who are even more disabled — people who can only move their eyes.

A. They have a double-whammy of not being able to move any part of their body at all, and then having people not believe that they're intelligent. Allowing them to burst out of that and have people appreciate they're full human beings inside, that's just enormously rewarding.

Q. How does Camera Mouse work?

A. It's a mouse replacement system. Instead of using a mouse, a webcam or built-in camera looks at you and tracks a spot on your face. If you move your head to the left, the mouse moves to the left. If you hold the pointer over the spot, a click is issued. Anything you can do with a mouse, you can do with Camera Mouse.

Q. How do you see technology like this evolving in the future?

A. Using the webcam so the computer can know more about you. For example, a colleague at BC has shown that rapid eye-blinks indicate stress. So, the webcam could be looking at your face and telling that you're stressed. It could read your micro-expressions and tell something about your emotional state and then change the way it's interacting with you.

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