Technology Review PUBLISHED BY MIT

Advertisement

The Stranger Side of CHI 2009

Some of the odder inventions demoed at the Computer-Human Interaction Conference.
Monday, April 13, 2009
By Kristina Grifantini

At the Computer-Human Interaction 2009 conference last week, researchers showcased many new and innovative ways to interact with machines, from smarter Web browsers to new interactive tables. But the event is also an opportunity to demo more far-out ideas for computer interaction. Here are five of the more unusual projects on show at the event.

Eye-Tracking Goggles: A team from ETH Zurich demonstrated a lightweight wearable system that tracks eye movements, letting the user control a computer using just his or her eyes. The system uses electrooculography (EOG) instead of video tracking, so a user only needs to wear a pair of lightweight--but odd-looking--goggles and a compact processing unit.

EOG tracks eye movements by measuring changes in the eye's electric potential field. With electrodes positioned above, below, and to either side of the eyes, the goggles can accurately calculate horizontal and vertical movements.

In testing, this allowed a user to control a simple computer game

Log In

Username Password Submit

Forgot your password? Register »

Videos

About Us

Insights, opinions, and our editors' analysis of the latest in emerging technologies.

Add RSS Feed XML

Blog Topics

- beef
- biomimetics
- cattle
- dairy
- genome
- protein
- silk
- spider
- strength
- textiles

Recent Post

- Better Burgers through DNA?
- Silk That's Tougher

Now Playing:
How Tor Works
[Full Story] [Larger Video]

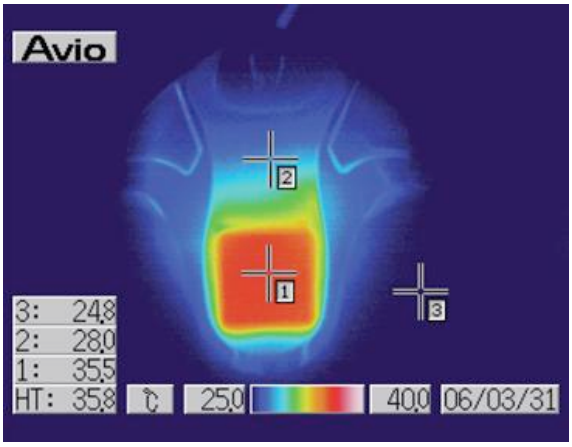
Latest Videos

using only his or her eyes. The researchers say that the approach could pave the way for more complex applications--for example, eye-controlled text entry. If several goggles sync up, people might even be able to interact collaboratively using just their eyeballs.

Hot 'n' Cold Mice: Researchers are constantly looking for more unusual ways to interact with machines. A team from NTT Cyber Solutions in Japan is experimenting with skin temperature as a new way of communicating.

The researchers modified a mouse and a trackball to get warmer or cooler as the user rolled over different things on a computer screen and tagged objects (such as part of photos) with temperature information ("hot," "warm," "cold"). They hooked up a gadget called a Peltier device to the trackball, which altered the temperature of the device as the user's cursor moved over those areas.

In testing, users were able to play a simple searching game by following temperature cues. Curiously, they also reported that food looked more "delicious" when a corresponding hot or cool sensation accompanied a picture of a dish.



Interactive Photo Viewers: Another group from Japan showed off sandwich-size, turtle-shaped "CaraClocks"--devices that sync when they touch to show related photos. For example, a father, mother, and child could connect their CaraClocks, turn a knob, and see pictures of one another at the same age.

The researchers behind the project, from Keio University, say that this can evoke what they call "collective memory." They also say that CaraClocks can generate various visual parallels between users by understanding their relationships and by analyzing tags attached to photos. A CaraClock

- Than Spidey's
- High Hopes for the New National CTO
- Twitter on Oprah: The Biggest Test Yet
- Optical Fibers Made of Metamaterials Should Be Superfast
- Business Bots Unleashed
- Robots Get Down to Business
- Personalized Medicine and the Genetics of Disease
- Rethinking Nano Drug Design
- Amazon Blames Book Delisting on "Ham-fisted Error"

How Tor Works

More videos »

Advertisement

Current Issue

Can Technology Save the Economy?

The U.S. stimulus bill includes tens of billions to support energy and information technologies. So why are economists and innovation experts so skeptical?

- Subscribe
  Save 41%
- Table of Contents
- MIT News

Magazine Services

- Gift Subscription
- Digital Subscription
- Reprints, Back Issues, Customer Service

Career Resources

Visit the Job Board and Resource Center to move your career to the next level.

Advertisement

Follow us on Twitter

even acts as a normal clock when sitting on a shelf.

CALLY the Cell-Phone Bot: A team from Simon Fraser University in Canada presented a cell-phone robot called CALLY. The prototype has four wheels, two arms with grippers, and space for a cell phone to dock at the front.

Once hooked up, the cell phone will eventually act as the robot's face, displaying simple expressions on its screen. Because many people use their cell phones as alarm clocks already, the researchers say that CALLY could be programmed to run away when you try to switch the alarm off (sort of like Clocky). While I find the idea of a gesturing or leg-equipped cell phone somewhat creepy, this could be a step up from the crude emoticons used to make sure a joking or serious tone doesn't get lost in a text message or e-mail. It could also be a step closer to effective telepresence.

Memory Matches: A group at MIT proposed the idea of a matchstick embedded with a tiny camera and microphone (green half) and micro projector (red half). A user swipes the red side of the match, physically lighting it on fire. This sets off the camera and microphone to start recording, moving down the length of the match in response to heat. The match, dubbed PY-ROM, would store the image and sound in the middle of a match. When a user lights the other end, a mini projector plays back the video once before burning away (literally). The group has so far designed a prototype, based on two coupled matches synced to a computer webcam and playback program.

The team envisions these "memory matches" as a way to embody memories with more value, pointing out that users often record extensive amounts of media that get buried in storage or cyberspace and quickly forgotten. The researchers argue that people would select the moments to preserve them with more care if taking a photograph or a video clip was more costly and time consuming. A one-time recorder and playback might be a fun party trick and a fleeting reminder to appreciate moments, but it's hard to imagine users swapping their digital cameras for digital matches.

Get Technology Review updates via the web, cellphone, or Instant Messager – Follow techreview on Twitter!

Advertisement

Wire Stories

- Facebook to adopt new rules despite vote shortfall
- Charities see potential, risk with social networks
- Microsoft CEO: No quick recovery
- US adviser says cybersecurity must be joint effort
- Apple pulls plug on "Baby Shaker" iPhone program

Advertisement

Match.com® Official Site
Find Someone Special in 6 Months Or We'll Give You 6 Months Free!
www.Match.com

7-Axis Humanoid Robot Arm
Humanoid Robot Arms for Home, Research, and Education.
www.robai.com

Robotics Training
Planning your future in robotics? Register now! Fully accredited
online-tech-training.com/Robotics

Tags: phone, robots, hardware, recording, media, photo tagging, robotics, cell phones, haptic, computers, computer-human interaction

Comments

Add New Thread

Advertisement

Inside TechnologyReview.com

Computing

Netbook Chips Create a Low-Power Cloud »

Web

A Word Processor That Keeps Track »

Communications

Gmail Sidesteps the App Store »

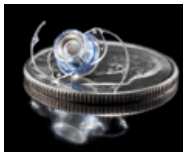
Energy

Harnessing Direct Solar Power for Propulsion »

Materials

Hunt for Dark Matter »

Biomedicine



Implantable Telescope »

Business

First Plug-in Hybrid to Be Sold in the United States »