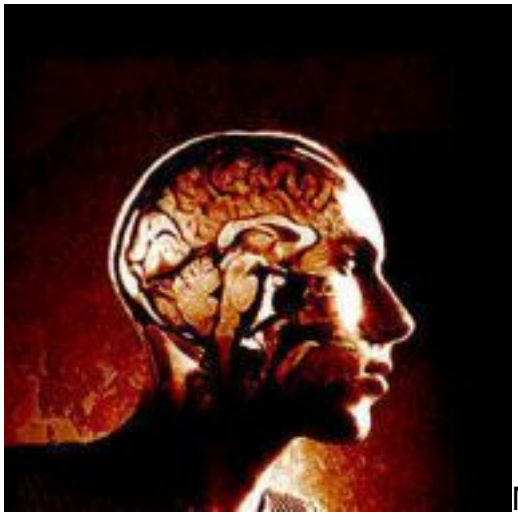
Intel Unveils Brain-Scan Interface Technology



Mind reading may no longer be the domain of psychics and fortune tellers – now some computers can do it, too.

Software that uses brain scans to determine what items people are thinking about was among the technological innovations showcased Wednesday by Intel Corp., which drew back the curtain on a number of projects that are still under development.

The software analyzes functional MRI scans to determine what parts of a person's brain is being activated as he or she thinks. In tests, it guessed with 90 percent accuracy which of two words a person was thinking about, said Intel Labs researcher Dean Pomerleau.

Eventually, the technology could help the severely physically disabled to communicate. And Pomerleau sees it as an early step toward one day being able to control technology with our minds.

"The vision is being able to interface to information, to your devices and to other people without having an intermediary device," he said.

For now, the project's accomplishments are far more modest – it can only be used with prohibitively expensive and bulky fMRI equipment and hasn't yet been adapted to analyze abstract thoughts.

The system works best when a person is first scanned while thinking of dozens of different concrete nouns – words like "bear" or "hammer." When test subjects are then asked to pick one of two new terms and think about it, the software uses the earlier results as a baseline to determine what the person is thinking.

The software works by analyzing the shared attributes of different words. For example, a person who is thinking of a bear uses the same parts of the brain that

light up when he or she thinks of a puppy or something else furry. A person thinking of a bear also shows activity in the amygdala – home of the fight-or-flight response.

While Intel primarily makes computer processors and other hardware, it often works to develop and demonstrate new technologies in an effort to stimulate the market and advance its reputation. Other innovations on display at Wednesday's Intel event in Manhattan included:

-Cell phone technology that would use motion, GPS and audio data gathered through users' cell phones to track what they're doing and who they're with. The technology can distinguish activities such as walking, giving a business presentation and driving. It also compares audio readings from different cell phones to determine who is in the same room.

This would allow users to share their activity information with their close friends and watch avatar versions of their friends throughout the day. It would also let users track and analyze data about how they spend their time.

-"Dispute Finder" technology that monitors users' conversations and Internet browsing to warn them when they encounter contested or inaccurate information. The software mines the Internet to find instances in which writers have claimed something is untrue. It then uses speech recognition technology to monitor conversations.

-A transparent holographic shopping display that could be used in department stores to point consumers to featured items. Shoppers could also use the giant screen to search the store's inventory, call up maps, and send item information to their cell phones.

-A TV set-top box that connects wirelessly to your laptop and monitors your Internet search history, as well as your TV viewing, to offer relevant video.

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