Telegraph.co.uk

Computers that read minds are being developed by Intel

New technology could allow people to dictate letters and search the internet simply by thinking, according to researchers at Intel who are behind the project.

By Richard Gray (http://www.telegraph.co.uk/journalists/richard-gray/) , Science Correspondent
Published: 7:50AM BST 22 Aug 2010

14 Comments (http://www.telegraph.co.uk/technology/news/7957664/Computers-that-read-minds-are-being-developed-by-Intel.html#disqus_thread)

Unlike current brain-controlled computers, which require users to imagine making physical movements to control a cursor on a screen, the new technology will be capable of directly interpreting words as they are thought.

Intel's scientists are creating detailed maps of the activity in the brain for individual words which can then be matched against the brain activity of someone using the computer, allowing the machine to determine the word they are thinking.

Scientists are developing computers that can read minds   Photo: ALAMY

Related Articles

Black boxes for intelligent cars (/motoring/news/7870387/Intelligent-cars-will-report-accidents-to-authorities.html)

Toyota unveils 'mind reading' wheelchair (/news/worldnews/asia/japan/5710830/Toyota-unveils-mind-reading-wheelchair.html)

Mind over matter as scientists use brainpower to make wishes come true (/science/science-news/3347610/Mind-over-matter-as-scientists-use-brainpower-to-make-wishes-come-true.html)

Katie Price named 'most dangerous cyberspace celebrity' (/news/newstopics/celebritynews/6082176/Katie-Price-named-most-dangerous-cyberspace-celebrity.html)

GCHQ denies plans to monitor all internet use and phone calls (/news/newstopics/politics/5269599/GCHQ-denies-plans-to-monitor-all-internet-use-and-phone-calls.html)

Church of England online wedding planner used by one third of couples (/news/newstopics/religion/7893271/Church-of-England-online-wedding-planner-used-by-one-third-of-couples.html)

Preliminary tests of the system have shown that the computer can work out words by looking at similar brain patterns and looking for key differences that suggest what the word might be.

Dean Pomerleau, a senior researcher at Intel Laboratories, said that currently, the devices required to get sufficient detail of brain activity were bulky, expensive magnetic resonance scanners, like those used in hospitals.

But he said work was under way to produce smaller pieces of equipment that can be worn as headsets and that can produce the same level of detail.

He said: "The computer uses a form of 20 questions to narrow down what the word is.

"So a noun with a physical property such as spade, which you dig with, produces activity in the motor cortex of the brain, as this is the area that controls physical movements.

"A food related word like apple, however, produces activity in those parts of the brain related to hunger. So the computer can infer attributes to each word being thought about and this lets the computer zero down on what the word is pretty quickly.

"We are currently mapping out the activity that an average brain produces when thinking about different words. It means you'll be able to write letters, open emails or do Google searches just by thinking".

Intel already have a working prototype that can detect words such as "screwdriver", "house" and "barn", by measuring around 20,000 points in the brain.

But as brain scanning technology becomes more sophisticated the computer's ability to distinguish thoughts will improve.

Justin Ratner, director of Intel Laboratories and the company's chief technology officer, said: "Mind reading is the ultimate user interface. There will be concerns about privacy with this sort of thing and we will have to overcome them.

"What is clear though is that humans are not restricted any more to just using keyboards and mice".

---

14 comments
Add a comment
Comment with a Telegraph account
Login (https://auth.telegraph.co.uk/sam-ui/login.htm?
logintype=communities&redirectTo=http%3A//www.telegraph.co.uk/technology/news/7957664/Computers-
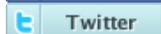that-read-minds-are-being-developed-by-Intel.html) | Register with the Telegraph
(https://auth.telegraph.co.uk/sam-ui/registration.htm?
logintype=communities&redirectTo=http%3A%2F%2Fmy.telegraph.co.uk%2F%3Fnl%3Dtrue%26variant%3D1)
Alternatively...
Comment with one of your accounts

D DISQUS
f Connect
t Twitter

Showing 14 comments
Order by [Newest first ▲▼]
Real-time updating is **enabled**. (#)
Follow with email (#) Follow with RSS
(http://telegraphuk.disqus.com/computers_that_read_minds_are_being_developed_by_intel/latest.rss)

flipefr (http://my.telegraph.co.uk/members/flipefr)
Yesterday 02:01 PM
I can see the hordes of droids in the next world war controlled by sopldiers sittings in front of screens in a bunker fighting with other robots controlled in the same way.
Report (#)
Recommend (#)

DCWhatthe
08/25/2010 04:50 PM
Is it possible to get started now, building your personal database of thoughts and corresponding computer actions? In other words, if you've been working with Voice Recognition, you know that you can define words or phrases to prompt the PC to run a program or insert a template into your text editor, or whatever.

Do we know enough of how the brain works, to be able to figure out how to structure our personal VR database, so that the phrases we define now, will correspond directly to synaptic patterns when