

# Innovation: Microsoft's Kinect isn't just for games

New Scientist

Microsoft's long-awaited [body-sensing](#) [1] technology, Project Natal, got a new name last week at the [E3 expo](#) [2] in Los Angeles. [Kinect](#) [3], as it is now called, is a set-top add-on for the Xbox 360 console that allows gamers to become the controller: move your arm and your on-screen character moves the same way; jump and it jumps.

While Microsoft says Kinect will [transform the way users play computer games](#) [4], many hardcore gamers are dubious. Earlier this year [New Scientist revealed](#) [5] that the depth-sensing camera is capable of identifying and tracking body parts to within a 4-centimetre cube in space, every 10 milliseconds, using just 10 to 15 per cent of the Xbox's computing resources. It's that latter statistic in particular that [worries some gamers](#) [6], who argue that any drain on computing resources will have a detrimental impact on game quality.

Whether or not Kinect succeeds as a gaming platform will become clearer when the device goes on sale in November. But games are only the starting point for [interface-less technology](#) [7] , according to one of the Microsoft brains behind Kinect's advanced object recognition algorithms.

## Help for surgeons

"Looking forward into the future, I expect to see it in other types of applications," says [Jamie Shotton](#) [8] of Microsoft Research UK in Cambridge. "We're starting to think hard about that now."

While games provided the initial impetus for Kinect, Shotton is now interested in exploring other practical applications, such as hands-free access to patient files for surgeons, smoother presentation software, and intelligent monitoring systems.

Kinect-like technology could, for instance, be used in a home-security system that wouldn't confuse the motion of pets or family friends with those of an unfamiliar intruder, Shotton says. It could even serve as a remote monitoring system to help care for elderly people if it was first trained to infer a person's well-being, or otherwise, from posture and activity levels.

"The algorithm is essentially there for doing that kind of application, it's just a question of whether this is a socially acceptable thing: having a camera looking in on people," he says.

## Millimetre precision

Kinect's body-recognition algorithms were trained to recognise body parts by

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running through millions of images, both human and computer-generated. While the training focused on poses that might be used in games, the system was also taught to recognise more mundane postures and gestures.

This gives developers access to a palette of 20 skeletal joints, tracked in 3D, with which to create poses and gestures that the system will respond to. "There's a lot of expression there," says Shotton.

The current camera and computing hardware limits the accuracy of Kinect. But with faster cameras and a bigger computational budget, Shotton is confident it could reach millimetre precision, a benchmark in the realm of bigger, more expensive motion-capture technologies.

That higher resolution is a key enabler if an interface-less computer is to be used for "real work", says John Underkoffler, chief scientist at [Oblong Industries](#) [9] in Los Angeles. Underkoffler was the science and technology adviser on the 2002 film *Minority Report*.

Less than a decade on, Underkoffler has [designed the G-Speak gestural interface](#) [10], similar in many ways to the technology that appeared in Spielberg's film. "When space is the medium, every nuance counts," he says.

Underkoffler sees Kinect as part of a broader trend towards computers that understand and interact with humans in real space. From storing digital files in physical objects, to multiple people collaborating to build virtual objects using just their hands, he says computers that can track people and objects in real space will change the way we think about technology, freeing humans from the need to "subvert our anatomy to the tyranny of the mouse and keyboard".

[SOURCE](#) [11]

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### Links:

[1] <http://www.newscientist.com/article/dn17258-innovation-behind-microsofts-fullbody-gaming-interface.html>

[2] <http://www.e3expo.com/>

[3] <http://www.xbox.com/en-US/kinect/>

[4] <http://www.xbox.com/en-US/kinect/default.htm>

[5] <http://www.newscientist.com/article/mg20527426.800-microsofts-bodysensing-buttonbusting-controller.html>

[6] <http://www.techradar.com/news/gaming/microsoft-natal-consumes-15-per-cent-of-xbox-cpu-power-661952>

[7] <http://www.newscientist.com/article/dn18286-lcd-screen-can-recognise-what-happens-in-front-of-it.html>

[8] <http://jamie.shotton.org/work/>

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[9] <http://oblong.com/>

[10] <http://www.youtube.com/watch?v=b6YTQJVzwlI>

[11] <http://feeds.newscientist.com/c/749/f/10899/s/b4f75bb/l/0L0Snewscientist0N0Carticle0Cdn190A650Einnovation0Emicrosofts0Ekinect0Eisnt0Ejust0Efor0Egames0Bhtml0DDCMP0FOTC0Erss0Gnsref0Ftech/story01.htm>