

[subject category: Health and medicine]

## MEDICAL IMAGING BENEFITS FROM COMPUTER GAMES

They may seem unlikely bedfellows, but the computer gaming industry could provide an important boost for medical imaging technology.

Researchers at the Centre for Medical Imaging Computing at University College London are investigating ways of using the latest graphics technology from the world of PC gaming to make medical imaging more efficient.

The work focuses on a new generation of computer graphics cards, the piece of computer hardware responsible for creating high-resolution moving images that are a feature of many computer games. Dr David Atkinson, who is leading the research, explains: “A graphics card containing 128 processors has recently been released – this is similar to having 128 computers in a single device. We are harnessing the processing power of these cards to open up new opportunities in medical imaging.”

Crucially, the manufacturers of the cards have released libraries for programming the devices, allowing non-specialists the opportunity to run new programs suited to particular applications.

Scanning technologies such as magnetic resonance imaging (MRI) rely upon a large amount of mathematical processing to create an image. In an MRI scanner, the body’s tissues are stimulated to produce tiny electromagnetic signals which are picked up by numerous small coils in the machine. These signals must then be processed mathematically to reconstruct an image.

The UCL team has shown that by using the new graphics cards it is possible to process the information much more rapidly than with conventional computers, which could allow, for example, real-time moving images to be obtained from MRI scanning. This could be useful for a surgeon guiding a catheter into a patient’s body.

“The system is looking promising,” Dr Atkinson says. “We have got the algorithms working and are now testing them on real data.”

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Brainy stuff...a section through the human brain as seen on an MRI scan