Cambridge News
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# Opinion

## Shot in arm needed from Whitehall

THE threat of swingeing cuts in Cambridgeshire's health budget is extremely worrying.

The Government insists funding for the county's hospital and GP services is being increased. But the fact is the primary care trust is still saddled with immense debts from previous years.

MP Andrew Lansley is right. New ideas are urgently needed – to wipe out the debts and to balance the books while still meeting increased demand.

This will not be something NHS Cambridgeshire can do on its own. The Government must step in and help.

As the population of Cambridgeshire swells, so must the money from Whitehall.

## Brilliant inventions

THE exhibition showing how machines and people can interact is yet another addition to Cambridge's high-tech kudos.

Many of the inventions on display were not only brilliant but of potentially great benefit in our everyday lives.

Hopefully we will soon see the best of them in production, and available for people to use.

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# Robots of future


RICHARD Leivers and his team of undergraduates don't need to worry about finding someone to play board games with.
Their "magic" draughts machine is more than a match for most human opponents.
Richard admitted: "We have only ever beaten it once – it can get a bit boring towards the end of a game."
The draughts pieces contain magnets. The machine first scans the board to work out what move the human player has chosen, then makes its own move by using the magnet to slide the piece.

**As Cambridge University hosts its Open House Festival of Interactive Technology, education correspondent STEPHEN EXLEY looks at six of the best groundbreaking ideas on show.**

IN Cambridge University's 800th anniversary year, a host of events is celebrating the institution's glorious history of academic achievement.

But a huge exhibition this week has been looking at work currently being undertaken which could influence our lives for decades to come.

The Open House Festival of Interactive Technology explores the relationship between man and machine, and examines new ways of improving communication between the two.

The one-off event, co-organised by the university and Microsoft Research Cambridge, was part of the British Computer Society's annual Human Computer Interaction conference, showcasing never-before-seen innovations from areas such as computing, communications and gaming.

Andrew Herbert, managing director of Microsoft Research Cambridge, said: "We are passionate about helping people understand the technology they use in their everyday lives – and more than education, we hope to inspire interest in computer science and encourage a new generation of innovators."

FOUNDATION: Alan Blackwell.

Among the 74 demonstrations on show were a glove which simulates the feeling of an object before it is touched, and a design for robot faces that respond appropriately to the emotions of people interacting with them.

The exhibits covered a range of sensory stimuli.

The Scent Whisper project involves creating jewellery which releases scented messages to heighten the wearer's experience and feelings of wellbeing.

And the Phonetic Arts team has developed technology to generate natural-sounding speech in any type of voice, which could improve the quality of dialogue in computer games.

Gaming experiences are also set to be improved with the use of Emotional AI (artificial intelligence), which enables designers to create characters with lifelike emotions and behaviour.

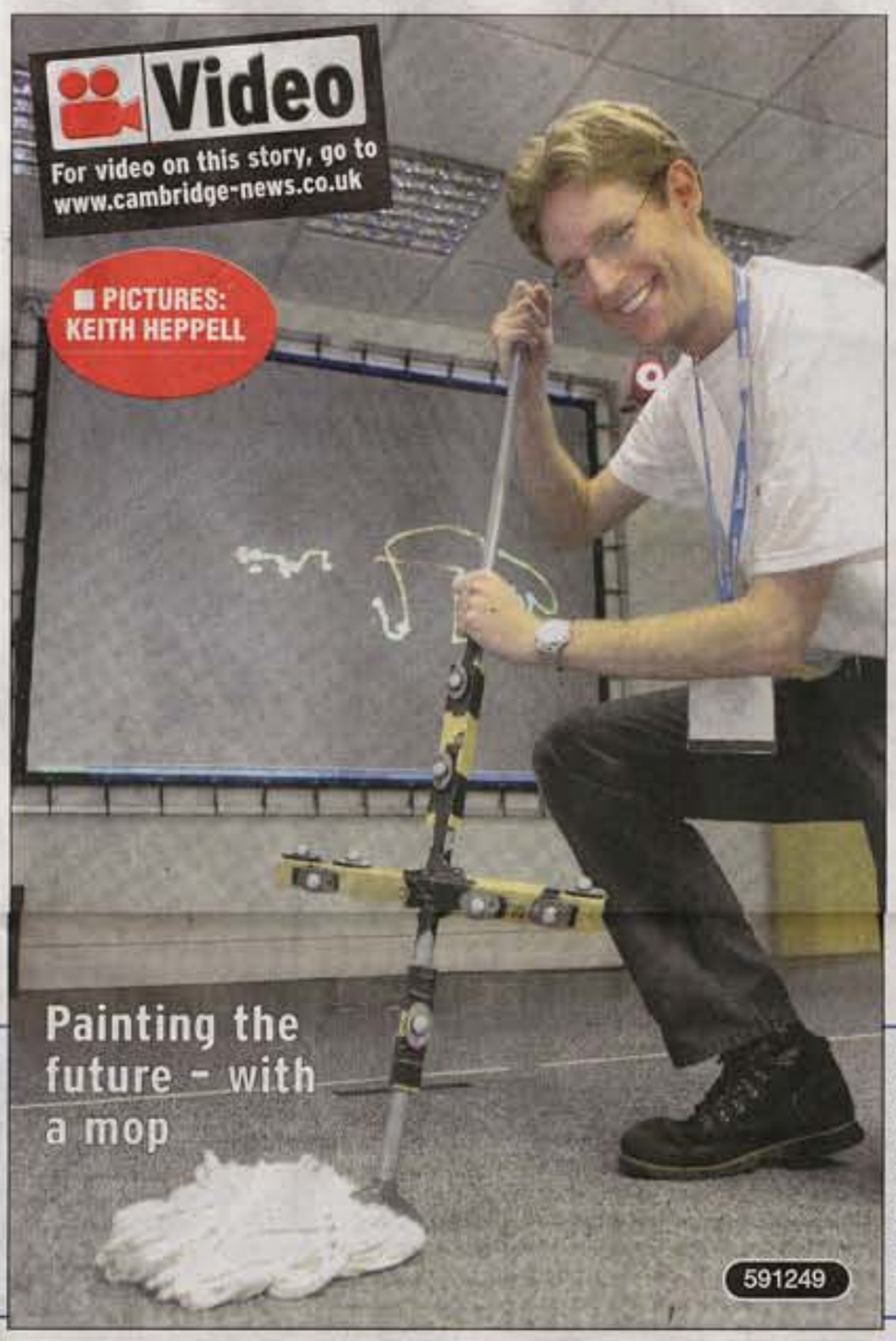
Alan Blackwell, event organiser, said: "The future of new technologies is in how they bring people together, and this event has shown how the intellectual heritage of Cambridge in all areas of knowledge is a foundation for future technical achievement."


THE e-sense project, based at Edinburgh and the Open universities, uses a sensory substitution experiment where a person can learn to "see" through the sense of touch.
Participants wearing a blindfold have to hit a ball as it is rolled towards them. It works by using a camera image of the ball to work out where the person should move their hand, and then communicates this to them by causing vibrations on a special jacket which fits over their abdomen.
Team member Paul Marshall said: "It's particularly useful for the blind, as they can 'see' through their skin."




EVER wanted to make Elvis smile? A team of Cambridge University researchers have adapted an over-the-counter toy robot worth $100 so that, using a video camera, he can mimic the facial expressions and gestures of the person looking at him.
The technology is being used to make more natural-looking,

# grow ever more human




## Painting the future - with a mop


THE Creator Capture project uses cameras and sensors on a mop to allow the user's "drawing" on the floor to be projected on to a large screen.

Cambridge University researcher Chris Nash hopes the three-dimensional input device will lead to a new understanding of movement and allow a whole range of actions – such as painting and driving – to be recorded and analysed.

He said: "Usually there is only a 2D or even one-dimensional input device. This can lead to a more interactive experience, and we can look at how people move."

## Training your brain

KRISZTIAN Hofstadter from Anglia Ruskin University's digital performance laboratory has developed a system of measuring brain activity – and teaching people to control their own thoughts.

Sensors are attached to the head, and measure brain activity which is then displayed on a moving model and computer screen to show how stressed a person is.

When the person calms down, they are played a sound of their choice as a reward.

Krisztian said: "It can be used, especially with children, to train their brain to stay calm. You can choose whatever sound you want – it could even be Britney Spears (pictured)."


realistic robots – and allow them to read a human being's body language and respond accordingly.

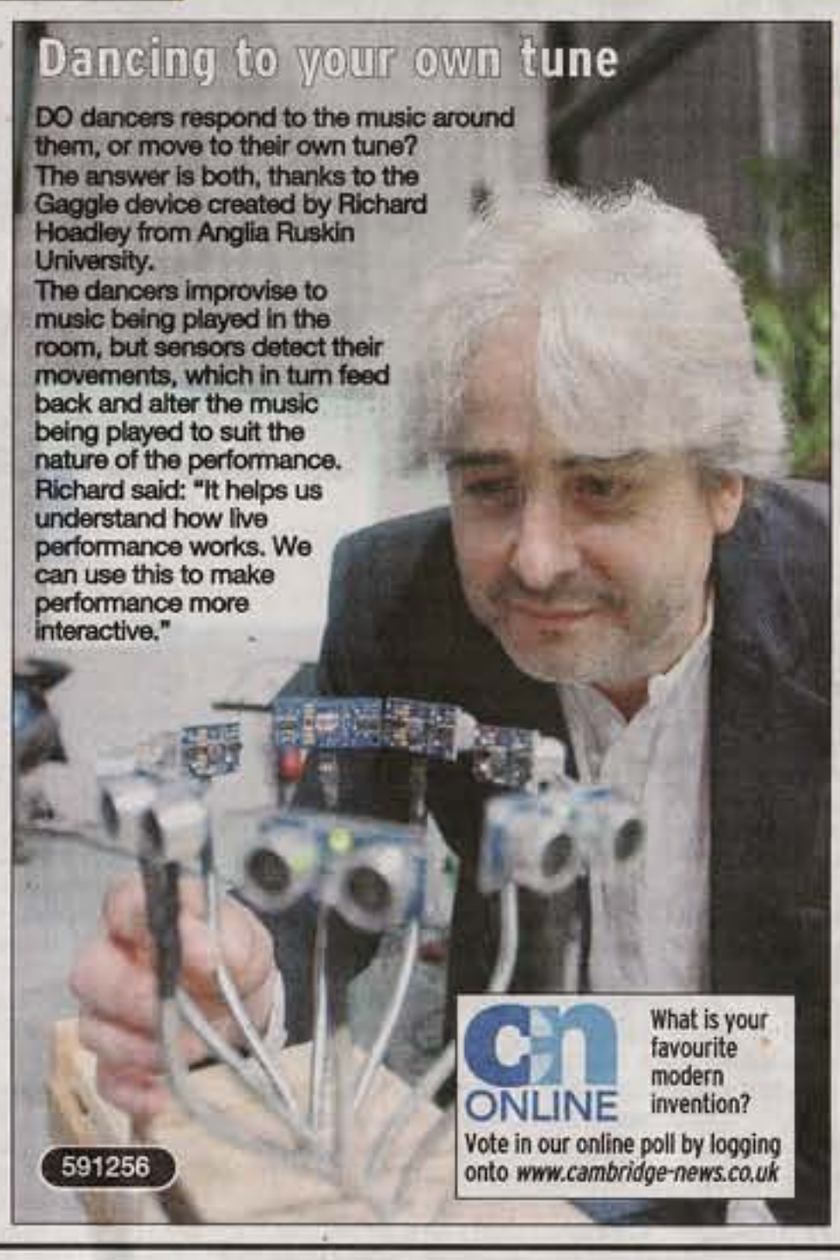
Researcher Laurel Riek said: "The two aspects of this are emotion recognition and emotion synthesis. The end goal is to make it as easy to communicate with robots as it is with people."

## Dancing to your own tune

DO dancers respond to the music around them, or move to their own tune? The answer is both, thanks to the Gaggle device created by Richard Hoadley from Anglia Ruskin University.

The dancers improvise to music being played in the room, but sensors detect their movements, which in turn feed back and alter the music being played to suit the nature of the performance.

Richard said: "It helps us understand how live performance works. We can use this to make performance more interactive."

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