

SixthSense - the wearable computer

Imagine being able to take a digital photograph by making the shape of a picture frame in the air with your hands, or dialling a phone number by simply tapping your palm with a finger. Or even navigating your way around a city by projecting a map onto the nearest wall, then using it as a touch screen to find a convenient subway station or bus stop. This is the promise of SixthSense, a prototype wearable device invented by MIT engineer **Pranav Mistry**.

According to Mistry, the wealth of information available on the internet is not intuitively available to someone on the move. Even today's smart phones, with their wireless connections and touch screens, require the user to stop what they're doing in order to tell the device what they want: for example, taking a photograph with a camera phone involves pushing a keypad or manipulating a screen.

"SixthSense augments the physical world around us with digital information and lets us use natural hand gestures to interact with that information," he says.

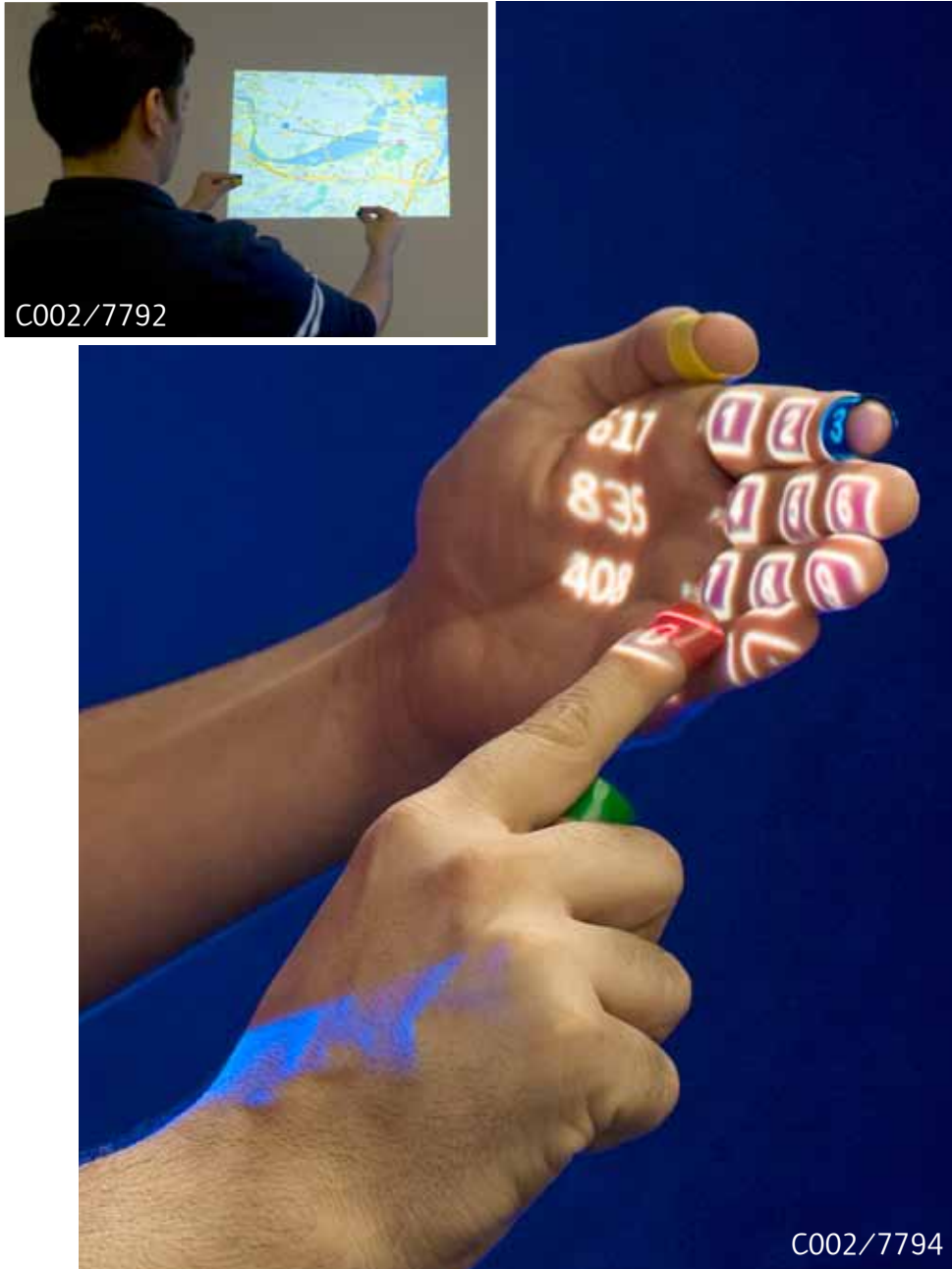
Mistry's device consists of a video camera and LED projector combined

into a pendant worn around the neck. This is linked to a smart phone worn on the hip, which houses the device's software and links it wirelessly to the internet.

The camera not only takes pictures, but also records the user's hand gestures. The software processes these gestures – it actually tracks coloured markers on the user's fingertips – and interprets them into actions. Make a frame with your hands, and the camera takes a picture.

The projector throws visual information onto any nearby surface: a wall, for example, or a tabletop. Again, clever software makes this into more than just a picture: the projected image itself becomes a





touch screen. Make a gesture that throws an image of a phone dialler onto the palm of your hand, and by touching the digits you dial the number. Or throw an image of a map onto a wall, touch a subway station, and you can access route information.

SixthSense, which uses standard components and, says Mistry, cost just \$350 plus the cost of the phone, also lets users draw icons

or symbols in the air with their index finger and recognise them as actions. Draw the @ symbol, for example, and you can check your email.

"SixthSense makes the entire world your computer," says Mistry.

Written by Jon Trux
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