

## THE WORK OF NEW TECHNOLOGY OF CONTROLLING COMPUTER WITH A WAVE OF YOUR HAND

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### *Abstract*

*This article is about amazing properties of modern computers that can be managed with a help of different gestures. Talented scientists from around the world work on various projects associated with it. Many extraordinary techniques can change resolutely our world.*

**Keywords: computer, technology, invention, touchless, wireless.**

### **Introduction**

Nowadays, the magicians behind the motion capture technology that powers Microsoft's Kinect, are launching Aquifi, the next step in their development of motion capture technology.

Palo Alto, Calif.-based Aquifi has spent the past three years developing software that uses commodity sensor equipment — like the cameras and video components in smart phones and tablets — to recognize and interpret gestures so that users can have touchless interactions with their devices. It has image sensors that can discern the depth between a user and a device, the size of any content can be adjusted depending on distance from the screen.

Applications for the technology are ubiquitous, but the first use-case that its founder Kareemi points to is being able to interact with content without having to hold a device. “You and the machine don't have to be welded together,” he says. If someone is making dinner with a recipe on a tablet, the device can be across

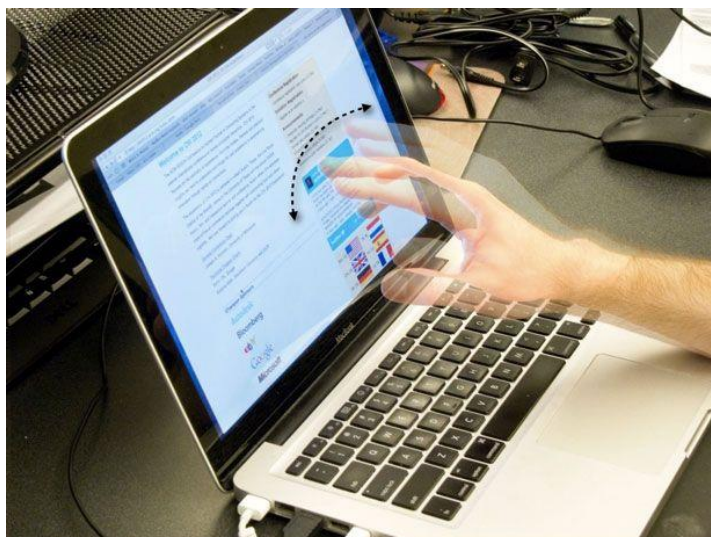


Illustration 1. Interaction with the invention.[3]

the kitchen from the stove and the chef can still scroll up and down the recipe onscreen, while still chopping onions.

### **Research results**

Team of electrical engineering students has designed an interactive display surface that allows users to control objects on a screen simply by gesturing in the air. The SpaceTouch surface can either replace an existing touchscreen or be embedded below a table or behind a wall, and can interface with a phone or computer. A wide variety of uses are possible for the technology, especially in settings where touching a screen is difficult, according to the team, which consists of electrical engineering graduate students Yingzhe Hu, Liechao Huang and Aoxiang Tang.

The 3-D motion sensing of SpaceTouch is made possible by the addition of an extra layer beneath an everyday touchscreen. The upper sensing layer is a matrix of motion-sensing electrodes. A specialized computer chip directs the electrodes to send out a voltage that oscillates, or goes up and down at a constant frequency, creating an electric field that extends to about a foot in front of the screen.

When a hand moves through the electric field, it disrupts the field in a way that changes the frequency of the voltage oscillation. To prevent the display layer from interfering with the motion-sensing electric field, the team added a transparent, conductive shielding layer below the sensing layer, and designed the computer chip to synchronize the voltage oscillations of the two layers.

Where can we use it? For instance, a surgeon in an operating room could use SpaceTouch to scroll through a patient's X-rays. A cook could browse recipes on a surface embedded in an oven or refrigerator door. And three-dimensional sensing could create new possibilities for video games and educational tools.

### **Conclusion**

New technology of controlling computer with waves of our hands is a big step in science. It allows to the people to pay more attention to the important things and doesn't waste time, sitting stationary at the computer. Besides, it is very easy that means even kids are able to use this technology.

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