**‘Electronic Skin’ Developed to Recreate Sense of Touch**

**为重塑触觉而研发的“电子皮肤”**

Singapore researchers say they have developed a form of “electronic skin” that can recreate a sense of touch.

新加坡研究人员称，他们开发出一种可以重塑触觉的“电子皮肤”。

The developers hope their invention will give people with prosthetic hands the ability to identify different objects.

开发人员称他们希望这一发明能让戴假肢的人识别不同的物体。

A team from the National University of Singapore created the skin device, which measures 1 square centimeter. The system contains 100 small sensors that attempt to recreate things like texture, temperature and even pain.

新加坡国立大学的一个研究小组发明了这种约1平方厘米的皮肤感触装置。该系统包含100个小型传感器，试图重现手感、温度甚至疼痛等触觉信息。

The researchers call the device Asynchronous Coded Electronic Skin, or ACES. They say it can process information faster than the human nervous system.

研究人员将这种装置称为异步编码电子皮肤(ACES)。他们称它能比人类神经系统更快地处理信息。

Machine learning methods trained the device to recognize 20 to 30 different textures. It can even correctly read Braille letters 90 percent of the time, the developers say.

机器学习方法使得该设备能够识别20到30种不同的手感。开发人员表示，它阅读盲文字符的正确率甚至可达90%。

Research team leader Benjamin Tee told the Reuters news agency that the system does not require movement to work. “Humans need to slide to feel texture. But in this case the skin, with just a single touch, is able to detect textures of different roughness.”

研究小组组长本杰明·迪告诉路透社记者，这个系统不需要移动就可以工作。“人类需要移动才能感受到事物的质感。但这种电子皮肤只要轻轻一触就能检测出不同粗糙程度的纹理质感。”

A demonstration showed that the device could identify the difference between a soft, squishy ball and a solid plastic one.

一次示范表演显示这种皮肤装置能识别出柔软黏糊的球体和实心塑料球之间的区别。

“When you lose your sense of touch, you essentially become numb... and prosthetic users face that problem,” Tee said. “So by recreating an artificial version of the skin, for their prosthetic devices, they can hold a hand and feel the warmth and feel that it is soft… ”

本杰明·迪表示：“当你失去触觉时，基本上会变得麻木。。。假肢使用者也面临着这个问题。因此，通过为假肢装置创造人造皮肤可以使他们感受到握手的触感，感受到温暖，感到柔软……”

Tee said his idea for the device came partly from the movie Star Wars, when character Luke Skywalker loses his right hand and it is replaced with a robotic one. In the film, the new hand is able to experience touch sensations just like the real one.

本杰明·迪表示，他发明这个装置的部分灵感来自电影《星球大战》，当时卢克·天行者失去了右手，取而代之的是一个机器手臂。在影片中，他的新手臂能够体验到和真手一样的触感。

The artificial skin technology is still going through experiments and development. But Tee said there had already been a lot of interest in the system, especially from the medical community.

人工皮肤技术仍在试验和开发阶段。但是本杰明·迪说已经有很多人对这个系统感兴趣，特别是医学界。

Tee said similar inventions that his team has developed include see-through skin that can repair itself when torn and a material for wearable electronic devices that gives off light.

本杰明·迪说，他的团队还开发了类似发明，其中包括撕裂后可以自我修复的透明皮肤以及一种可发光的可穿戴电子设备材料。

I’m Bryan Lynn.

布莱恩·林恩报道。

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