

Researchers using Kinect to allow deaf people to communicate via computer (w/ Video)

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Researchers from Microsoft Asia and the Institute of Computing Technology at the Chinese Academy of Sciences have been working together to develop a computer system able to translate gestures used in sign language to text. The combined team presented the results of their research at this year's Faculty Summit 2013—a conference held annually by Microsoft to promote information technology sharing among the academic community.



While teaching a <u>computer system</u> to recognize and translate <u>hand</u> <u>gestures</u> to text might seem unnecessary—people that are deaf or hard of hearing can simply type words and sentences using a keyboard and read those typed to them—those that are hearing impaired would like to speak in their <u>native language</u> using a computer just as much as nonhearing impaired people. Unfortunately, to date, most such efforts have been less than successful—some require the user to wear gloves, other's rely on simple web cams—neither approach has proven to be practical. For that reason, the researchers in this latest effort turned to Microsoft's Kinect device.

Members of the team demonstrated their system at the DemoFest portion of the conference, showcasing software that has been developed for the Kinect that successfully translates American Sign Language (ASL) into text. The system developed by the team operates in two modes. The first, called simply Translation Mode, translates physical hand or <u>body movements</u> into text or speech. The second, called Communication Mode, allows a person speaking in ASL to communicate with someone else who is communicating in typed English. The system uses an Avatar to translate text coming from someone typing text on a keyboard, then converts their response to text and sends it back to the other person. Their demonstration showed that the system is capable of translating sentences, not just words, a significant step forward.

The researchers stressed that their system is still a work in progress but hope to eventually create a system that is fully functional and reasonably inexpensive. That would mean a Kinect based communication system that operates entirely with hand gestures and spoken words—all in real time. Also, it would allow for conversion to other sign language dialects as well.

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