

Smart glove that translates sign language into English, Chinese text wins contest

Osmond Chia

A smart glove that instantly translates several sign languages into English or Chinese text is being developed in Singapore, potentially enabling deaf people to communicate without an interpreter.

The glove tracks the hand movement of sign language users through sensors along the fingers and thumb. It then interprets the words through an app paired via Bluetooth. The app also animates spoken English words into sign language to help deaf people understand those who speak to them.

The See Your Voice project was the winning pitch at the inaugural Huawei Tech4City Competition finals on Tuesday, beating 140 other teams in the competition that challenges students to use technology to tackle local issues.

Mr Gong He, 22, the team's business lead, said they wanted to use technology to assist deaf people to communicate with others after they learnt about the daily struggles faced by some deaf friends.

The number of individuals with hearing loss in Singapore is estimated to be around 500,000, Mr Gong said in his presentation on Tuesday at Singapore Management University.

According to the Singapore Association for the Deaf, there are more than 5,400 people with hearing loss



See Your Voice team members Gong He (far left) and Huang Yunqi with the sign language-interpreting glove that won them first prize at the Huawei Tech4City Competition finals at Singapore Management University on Tuesday. The plight of their deaf friends inspired them to come up with the project.
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registered here, and the number is growing. Mr Gong said several interviewed deaf people said it was often challenging to communicate with those who could not speak in sign language, and that they preferred to keep to themselves or interact only with other signers.

There is also a shortage of sign language interpreters and a lack of translation services in mainstream media today, he added.

Mr Gong, who just completed a master's in business analytics at the National University of Singapore, said: "We may easily neglect our deaf friends in our commu-

nity... We realised that there was a need by the deaf community to be understood and thought we could contribute with technology."

The project was started in 2020 by Mr Gong, NUS data science and machine learning student Sun Shizhuo, 23, NUS mechanical engineering student Huang Yunqi, 24, and computer science doctoral student Xu Xuanqi, 22, from Peking University. They trained the glove to detect the hand movements of 8,000 words in various sign languages, including the Chinese, American and Singapore versions.

The word count and number of

languages recognised is expected to grow as they work with Huawei to bolster the system's machine learning capabilities. Mr Huang said the glove is expected to be rolled out to some deaf communities here by the end of the year.

Contest judge Christina Lee, founder and chief executive of sustainability consultancy Global Green Connect, said the judges, which included former foreign minister George Yeo, were sold on the project's social impact.

Ms Lee told *The Straits Times*: "The message was clear... people will see that the return on invest-

ments here is not just money, but the social impact of the gloves."

The team was awarded \$10,000 and will be fast-tracked into Huawei's Seeds for the Future programme, which sends young people to China for tech-related training.

The second place went to a pitch for a mobile app that can guide commuters with early-stage dementia around public areas like train stations. A consumer app to support heritage businesses like local craftsmen and cobblers through curated listings was third.

osmondc@sph.com.sg