Wireless device lends a listening ear

It detects sounds and alerts users who are deaf by messaging their mobile devices

Hoe Pei Shan

He is a doting father of a healthy 18-month-old daughter.

But unlike most parents, Mr Jimmy Wong has never heard his toddler cry, because he is deaf.

Having completely lost his hearing in early childhood, the 34-year-old administrative officer, whose wife is also deaf, worries even more about his young daughter when she is out of his sight, wondering if her cries of distress are going unheard.

But a new wireless audio sensor device, developed by a team of academics and researchers at the Singapore University of Technology and Design (SUTD), could allow Mr Wong to finally "hear" his daughter.

About the size of a yoyo, StickEar turns noises into alerts on mobile devices.

With its reusable adhesive strip, the device can be stuck on the wall next to the front door, for instance, and easily configured to recognise the sound of the door bell.

It would then relay the sound to the user through a mobile application that sends a vibrating text alert with a customised message such as "someone is at the door".

"For the deaf, StickEar would be an easy way to deploy an 'ear' onto objects and in certain places – allowing them to listen in even from a long distance," said SUTD assistant professor Suranga Nanayakkara, who leads the team behind the device.

StickEar, which can store hundreds of audio recognitions, comes with an LED light that flashes when one of these sounds is picked up.

It also differentiates between multiple sounds occurring at the same time within a 3m radius, sending the user distinct alerts.

PHOTO: RAZOR TV

Mr Jimmy Wong, an administrative officer who is deaf, receives an alert on his mobile device when his 18-month-old daughter cries, as her crying sounds are captured by StickEar.

Its creators believe the device is the first of its kind in Singapore.

"These types of products are not found in Singapore – we've got to search for them on the Internet to buy them from overseas," added Ms Lily Goh, 33, a social entrepreneur who is deaf.

She has bought several vibrating clocks and sound amplifiers online but has not come across anything similar to StickEar.

She hopes StickEar will help her know when her kettle is whistling, when her washing machine and microwave are beeping and when someone is at the door.

Dr Nanayakkara says his team intends to fine-tune and commercialise the product, which was awarded a provisional patent in January, making it slimmer and cheap so users can afford to buy in bulk for deployment in various rooms.

They hope to see StickEar on the market in six to nine months, ideally priced below $50.

As for Mr Wong, he tested the device last week and found that it solved some of his problems as a deaf parent.

His verdict was that StickEar "will certainly benefit the deaf community".

He hopes to buy one and place it above his daughter's crib so that he knows when she is crying.

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AMANDA WONG
with more on how the device works

Download a QR code reader app on your smartphone and scan this code for more information.

GOING BEYOND DISABILITIES

It all started with an idea to create technologies that would feel like "natural extensions of the human body".

Dr Suranga Nanayakkara, a Singapore University of Technology and Design assistant professor, wanted to create devices that not only help people to overcome disabilities but also allow them "to go beyond". The team he leads set out to build a device that functions like an "ear" for deaf people, is easy to operate and can be used anywhere.

It took more than eight months to come up with the StickEar, which contains sensors, along with a microphone, speaker and wireless radio frequency chip. These allow it to monitor and recognise sounds.

Users can programme the unit to recognise distinct sounds, and set customised messages that will appear when these sounds are detected.

When the device detects the programmed sound, it flashes, and at the same time, sends a message to the user's mobile phone through a centralised wireless base station, much like a modem. The message then appears through a mobile application that comes with the device.

The mobile application is currently available only for Android phones, but Dr Nanayakkara said his team is developing similar applications for other smartphones.

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