

A Sydney team invents a 3D hearing aid

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Over three million Australians suffer from hearing loss but fewer than 20% of them use hearing aids. Part of the problem is that technology just isn't good enough for them. Researchers from Sydney are changing that.

They've developed a more effective way of solving the biggest problem of the hearing impaired—how to carry on a conversation with more than one person or in a noisy environment. The result is a spatial hearing aid which provides the listener with direction as well as sound. It is now undergoing clinical trials in Sydney. If it passes the trials it could be on the market in three years.

The Spatial Hearing Aid™ aims to enable normal segregation of speech, and to provide a significant increase in speech intelligibility. The device should allow users to regain their ability to participate fully in their family, social and business lives.

“We humans naturally use our brains to sort out what sounds we want to pay attention to. The Spatial Hearing Aid™ provides spatial cues to help the hearing-impaired do this, without arbitrarily deciding which sounds are important,” says Fresh innovator Dr Craig Jin, Senior Lecturer in the School of Electrical and Information Engineering at the University of Sydney and lead researcher on the project.

“This is markedly different to the current industry trend which focuses on allowing the technology built into the hearing-aid to decide which sounds are important.”

Up to 22 per cent of Australians suffer some sort of hearing impairment and, in people over 70, this rises to almost three out of four.

The costs in lost productivity, special education and medical care from untreated hearing impairment in the US are estimated at US\$56 billion a year and growing. The Hearing Aid industry is worth about US\$6 billion, with about 5.5 million units sold each year.

“Our research used a unique approach,” Jin says. “We have simulated hearing-impaired listening in ourselves so that we really understand the issues confronting our end users. We aren't simply developing another hearing aid. Through our research we are examining how best to solve some of the most pressing problems facing hearing aid wearers in a new way.”

“In addition, we are testing the aid in a range of potential users to demonstrate the real world benefit for the hearing-impaired. And the University has established a spin-off company, VAST Audio Pty Ltd, to commercialise our efforts,” says Jin.

Jin's innovation has won him a place at Fresh Innovators—a national initiative to bring the work of 16 early-career inventors to public attention. After training in Sydney, the Innovators are talking to the media, schools and business about their ideas. One of the 16 will win a study tour to the UK courtesy of the British Council Australia.

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