Skysong Innovations
Advancing the Arizona State University Knowledge Enterprise

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System for Increased Control of Cochlear Implant

Cochlear implants have made great advancements and are considered the standard of care for those who have severe hearing loss or for whom hearing aids no longer work. However, most implants on the market struggle to filter out ambient noise which ultimately hurts patients' hearing quality. Because of a lack of personal control over their hearing devices, patients must make an appointment and meet with an Audiologist for any adjustment needs. While there are devices on the market that allow for some adjustment, they are costly and rely on inconvenient external microphones.

Researchers at Arizona State University and their students have developed a novel system which gives patients the ability to adjust the range of hearing in their cochlear device. Using a Bluetooth-capable integrated circuit between the microphone and speech processor, tunable filter settings are controllable directly from a software app, through a user-friendly interface. This system has been validated and demonstrates a dynamic platform for the smart processing of cochlear device sound.

This system allows patients to manually adjust their range of hearing using a simple and user-friendly interface, giving them greater flexibility and control that was once reserved for Audiologists only.

Potential Applications

- Manual, user-controlled adjustment of range of hearing in cochlear devices

Benefits and Advantages

- Safety and Effectiveness - patients can modify copies of Audiologist's defined presets, without overwriting
- Convenient – the software can operate on any mobile device
- Gives patients more control and flexibility over what they hear of their cochlear implants
- Bluetooth enabled

- Enables hearing customization

For more information about the inventor(s) and their research, please see

Dr. Muthuswamy's departmental webpage

Dr. Dorman’s Laboratory webpage