

See Sound for Hearing Impaired

Mada Center

Deafness is ultimately an invisible disability – you can't see it in the way that you can see someone who has lost an arm or a leg, making it what some call the “most normal” disability possible. Yet that doesn't make life any easier for those affected. Assistive devices for deaf people are doing more than just enhancing their hearing. ‘Smart’ hearing systems are now allowing people to stream their music, run their homes and monitor their health. Homebuilders are now constructing houses that are completely smart from the ground up. Likewise, there are devices, accessories, and gadgets readily available to make homes smart enough to be hearing assistive.

The sounds of routine household noises are something many of us take for granted. There are some of the sounds like a fire alarm, baby crying or a microwave in the kitchen that a lot of people depend on to take the next action, attend to chores, or just to be safe. Having said that, many of these sounds are not accessible to deaf people. There isn't an easy way for a deaf person to respond to sounds in a day to day setting, especially in a life-threatening situation.

To make daily sounds accessible to deaf people, a device that notifies hearing-impaired users of household sounds like fire alarms or children crying by sending notifications to their smartphone. This is a vital necessity to the deaf community for a couple of reasons. First, there is a phenomenon which many take-ups for granted called situational awareness. Often many tragedies occur due to lack of situational awareness in hearing-impaired community. The system will be taught how to identify specific sounds by analyzing millions of samples available

When a sound occurs, the technology will be able to capture it and first illuminates, and then its machine learning model predicts what it is with a certain confidence level. The user is immediately notified on their phone about the sound. The always-listening system will have a library of unique household sounds, and its machine learning model will be trained using more than 2 million samples from YouTube for accuracy. The solution will also be customized so the user gets notifications for sounds that they consider more important. The mobile application uses artificial intelligence to identify the variety of sounds. The hardware listens for things like a crying baby, security alarms and even glass breaks. As soon as it recognizes a sound, it sends a visual notification to a user's phone.

Such a solution is already available in the market under the name of WAVIO system solutions.

The main features of see sound by Wavio includes:

- Predicts a set of 75 unique household sounds based on a database of over 2 million sound clips.
- Listens for both common household and life-threatening sounds that could indicate an emergency.
- Ability to customize notifications based on what sounds are important to you.

- Seamlessly connects with other assistive devices that may already be in the home.
- See Sound alerts users that a sound has occurred via their smart devices.

How Wavio works:

- Wavio works on its own as an app or in union with a smart home device called See Sound.
- When a sound occurs inside or close to a household, the nearest See Sound registers the increase in volume and lights up.
- See Sound then interprets the sound it hears and makes a prediction.
- It then visually alerts the user that the sound has occurred on their smart devices via Wi-Fi.