Novel Prototype To Identify Sound Direction Using Vibrations

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This investigation is conducted to experiment if a prototype for external use can identify the direction and magnitude of the sound. The objective of this prototype is to be able to non-invasively assist people with hearing loss externally and temporarily. This investigation experimented with the first phase of this prototype and calculated the failure rate and its effectiveness. With that in mind, an electronic device was created in the form of a 360-degree head accessory made up of an array of microphones that together with six micro vibrators (all assorted in the degrees 0, 60, 120, 180, 240, 300) and a microprocessor can detect sound and calculate the direction which is provided to the user through small vibrations. This is done so that the device can help a person with hearing loss by providing immediate information about the sound sources that surround the individual. As a result, the device calculates along with an algorithm where there is the greatest sound and then notifies the user through small vibrations. Five (5) individuals were asked to help with the experiment to see the precision of the sound localization. When doing the experimentation, the prototype turned out to be 92% effective, highlighting that it is possible to identify the direction of the sound through vibrations.

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