Haptic Sound Guide: An Innovative, Affordable Approach to Combat Hearing Loss and Deafness

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This project aims to develop an innovative solution to support individuals facing hearing impairment, irrespective of its onset during youth or later in life. A haptic vibration apparatus was initially designed to guide users toward the direction of sound, and our research and evaluation processes led us to refine the design. The proposed prototype now includes multiple microphones, each corresponding to vibrational components. Designed to resemble conventional headphones, the device prioritizes discretion, ease of use, and ergonomics for the user. We used existing and readily accessible Arduino infrastructure and 3D printing technology to lead the prototyping phase that prioritizes practicality and accessibility.