According to the World Health Organization, 1 in 20 people worldwide suffer from disabling hearing loss, hindering their interactions with the world around them and potentially putting them in life-threatening danger even in daily situations. We identify three specific problems that these people face, and propose a solution that attempts to solve them. First, identifying the direction of incoming sound. Second, hearing and understanding conversation in social interactions. Third, identify life-threatening noises, such as cars while crossing roads and fire alarms. Our solution has two distinct portions that when used in conjunction attempt to resolve these three issues. The first component is a hat with microphones and four vibration motors, which vibrate in the direction of the incoming sound. The second component is an augmented reality headset which can perform real-time closed captioning of noises. For the purposes of demonstration, we use the Android ARCore functionality, but we imagine the target hardware for this application to be the Microsoft HoloLens is our target hardware. Our project combines signal processing, machine learning, and augmented reality for a seamless application and one that presents a valuable addition to the future of healthcare.