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## Auditory testing using smart speakers and automatic speech recognition

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More than 500 million individuals experience hearing loss globally. During the COVID pandemic, significantly, people could not access to monitor their hearing or fit their hearing aids, causing the restriction, or long waiting to see an audiologist. To this aim, the focus of my study is to develop and validate a machine learning application to assist audiologists in testing users' hearing remotely via smartphones or smart speakers. The developed application will save users' commuting time and costs and particularly help users with disabilities. The different environments can be generated by utilizing multiple smart speakers in the living room. Besides, improving algorithms of automatic speech recognition (ASR) converting verbal commands to texts will help evaluate the response voice of impaired listeners. Then, presented ASR will be implemented in a smart speaker or smartphone. Thus, the results of this study lead to assessing users' hearing and help audiologists recommend a better diagnosis.