

Description

Auditory Training Tool aims to assist human users in improving their perception of speech in noise and auditory memory. To accomplish that, it replicates real life conditions in which a subject has to perform a complex task (e.g., read a book in a noisy cafeteria)

Methodology/ Technologies

The design of ATT is guided by the clinical experts and considering the relevant literature for the CCRM and Story-in-noise tests for Auditory Training.

The ATT is implemented in the Unity Development Environment together with, Android SDK and JDK to build ATT for android smartphones, C# as the primary programming language, JSON for the data format, HTTP protocol to communicate with HOLOBALANCE's cloud backend, Google's Speech-to-Text API to support the vocal commands.

References

1. House, C. (2014). LSCD 2014 : Workshop on Late Stages in Speech and Communication Development UCL, London, UK, 3-4 April 2014. (April), 3-4.
2. Jutras, B., Oulley, M., Lafontaine, L., & Pinnault-skvarina, A. (n.d.). LISTENING TO SPEECH IN NOISE : EVALUATION AND TRAINING Acknowledgments. 55-56.
3. Don H. Johnson (2006) Signal-to-noise ratio. Scholarpedia, 1(12):2088
4. Choma, M. A., Sarunic, M. V. Yang, C., & Izatt, J. A. (2003). Sensitivity advantage of swept source and Fourier domain optical coherence tomography. 11(18), 2183-2189.

Main Functionalities

- 1) Task 1, an adaptation of the Children's Coordinate Response Mode (CCRM) test.
- 2) Task 2, a story-in-noise driven multiple-choice task.
- 3) A sound environment that facilitates the different difficulty levels for both tasks.
- 4) Support for vocal commands (required by Task 2)
- 5) Partial (only for Task 1) multi-lingual support (English, Greek, German).

Results/ Interfaces

