Master thesis Hörtechnik und Audiologie, Engineering Physics

Master thesis „Effect of visual cues on movement behavior in elderly"

Background: In the Gesture Lab work is being done to create realistic audiovisual environments for hearing aid testing. The head, eye and body movements, EEG and pupil dilation can be measured while doing tasks in these environments. Animations are being used in the lab to create the audiovisual environments. It needs to be checked if people move in a similar way when looking at the animated characters as when looking at a video of real persons and how the different visual cues affect their task performance and perception. Knowing this would help to determine which behavioral features of the animated characters are important to make sure that subjects behave the same as they would in everyday life. A study was done with young normal-hearing subjects [1], but it is also important to test elderly (normal-hearing) subjects as they may perceive things differently.

Aim: Testing the effect of visual cues on movement behavior, task performance and perception in elderly.

Approach: Animated characters with different lip-syncing and gaze patterns will be compared to a video of real persons and an audio only condition. Two listening tasks will be done in the different visual conditions, and a questionnaire will be taken to rate the visual conditions. These tasks were developed for young subjects and need to be adapted to make them suitable for elderly. Extra conditions or tasks could be added. A comparison could be made to the data of the young subjects.

Required background and skills: Matlab skills, basic knowledge of acoustics and audiology (for example PPAA course)

Contact:

Maartje Hendrikse
maartje.hendrikse@uni-oldenburg.de
Haus des Hörens 2.10

Prof. Dr. Volker Hohmann
volker.hohmann@uni-oldenburg.de

Literature:

[1]   M. M. E. Hendrikse, G. Llorach, G. Grimm, and V. Hohmann, "Head and eye movement behavior in realistic virtual audiovisual environments for hearing aid research," in *20. Jahrestagung der Deutschen Gesellschaft für Audiologie*, 2017.