UNIVERSITÄT ZU LÜBECK
INSTITUT FÜR MEDIZINISCHE INFORMATIK
NACHWUCHSGRUPPE MOVEGROUP

Call for Master, Bachelor Thesis or Student Research Project

Audio-based Voice Impairment Detection

Description:

Voice disorders have a significant impact on quality of life and cause absences from work and financial losses. According to research by Jung and Delb (2018), the probability of developing voice disorders in Germany is 6.6%.
Voice therapy covers various aspects, including improving voice quality, strengthening the diaphragm and voice, and working on chest resonance. Functional voice therapy is a proven effective method for treating voice disorders. This includes specific exercises that are designed as home therapy.
As part of the LAOLA project, an app is being developed with which the speech therapy exercises can be carried out. It represents an interactive training using real-time analysis of the visual and auditory aspects.

The aim of this work is the automatic detection of speech impairments using audio-based data. Features are extracted from an annotated dataset of speech exercises using audio analysis algorithms. These are then used to detect voice impairments using machine learning. In addition, the relevance of the individual features to the prediction accuracy can be examined.

In the case of a student research project or similar, a subsequent thesis is possible.

Keywords: data processing system, audio analysis, speech therapy, machine learning, feature extraction, feature selection

[1] JUNG, Sebastian. Systematisches Review und Metaanalyse zur konservativen Behandlung von funktionellen Stimmstörungen. Jung, 2018.

If you are interested and have any questions on this topic, **please book an appointment** via:
https://calendly.com/fudickar/

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