

**Master Thesis Proposal**

**Topic:**   **Double-Talk Detection for Robot Audition**

**Description:**

In an Acoustic Echo Cancellation (AEC) problem, the performance of an acoustic echo canceler is usually impaired by the presence of a near-end interferer. This double-talk situation is often addressed using Double-Talk Detectors (DTD), which stop the adaptation of the acoustic echo canceler as soon as double-talk is detected. However, in time-varying environments, DTDs should also be able to distinguish a change in the echo path from the presence of a near-end signal.

In a robot audition scenario, the near-end interferers are not limited to other speakers only, but also include the robot self-noise. In addition, due to the robot movement, the acoustic path between the microphone and the loudspeakers is also time-varying.

In this thesis, the use of coherence-based, and artificial neural networks-based DTDs for robot audition shall be investigated and evaluated. Implementations are expected to be done in MATLAB.



**Prerequists:** Course ‘Digital Signal Processing’, MATLAB experience.

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**Available:** Immediately