

Advanced Speech Processing

Organiser:

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Lecturers:

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ECTS: 2.5

This course aims to give participants a deeper understanding of speech processing by presenting state-of-the-art technologies and current challenges. Rather than giving a coverall introduction to speech processing, the course will focus on selected topics with an emphasis on applications. Topics covered include

- speech analysis
- speech coding: quantization and compression, voice over IP, standardization
- speech enhancement: noise reduction, bandwidth expansion, single-channel and multi-channel methods, hearing aids, real-time issues
- speech recognition: feature extraction, acoustic modeling, large vocabulary continuous speech recognition and understanding, robustness issues
- speaker recognition and segmentation: speaker identification and verification, speaker diarization
- speech data mining and document retrieval.

Various instruments (e.g. labs, projects, seminars) will be introduced in the course to stimulate discussions and collaborations within and out of lectures.

Prerequisites:

Digital signal processing, basic speech processing.