Using speech technology to investigate phonetic variation in conversational speech

Barbara Schuppler (Technische Universität Graz)

Traditionally, research in phonetics and phonology is driven by specific hypotheses, with a methodological focus on experiments designed to control for the acoustic quality as well as the linguistic content and structure of the speech recorded. The study of spontaneous conversations has received more and more attention in the last decade as it reveals additional insights to controlled experiments with respect to how every-day speech processing works. However, it comes with the disadvantage that conversational speech corpora may come with varying recording quality (e.g., due to overlapping talk) and a high degree of variation conditioned by linguistic and extra-linguistic factors. Speech technology based methods may facilitate the analysis of conversational speech in several ways: for the automatic creation of annotations, for the selection of tokens for a specific study, for the extraction of acoustic features, and finally, for the statistical analysis (e.g., classification, clustering). In this talk, I will first introduce standard methods used in automatic speech recognition (ASR) for read speech and illustrate how they can be adapted for the analysis of conversational speech. I will then present some results from my own research on pronunciation variation and prosodic variation in conversational Austrian German and illustrate how the use of speech technology facilitated my investigations.