

Bachelor-/Masterarbeit

Theme: Data Mining for Intelligent Speech Analysis

Intelligent Speech Analysis (ISA) plays an essential role in smart conversational agent systems that aim to enable natural, intuitive, and friendly human computer interaction. By these techniques, machine could extract not only the linguistic information (e.g., text), but also some other paralinguistic information, e.g., speaker's states (emotion, intoxication, etc.), ethnicity, personality (open, extravert, etc.), age, gender, and even identification.



However, today's annotated speech data is quite sparse, especially for the paralinguistic tasks, which prevents the intelligent speech analysis systems being applied into realistic scenario. This issue can be overcome by large-scale speech and meta-**data mining** from public sources such as social media, crowd-sourcing for labelling and quality control, and shared semi-automatic annotation.

The main task of this program is to use **active learning**, **semi-supervised learning**, or **cooperative learning** with the aim of ultimately reducing the human annotation work while achieving the same performance.

Requirements:

- Preliminary knowledge in Machine Learning
- Familiar with at least one programming languages (e.g., MATLAB, PYTHON, C/C++, Perl)
- Linux is preferred

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If you are interested, please do not hesitate to contact me. Let's work together for such a meaningful and interesting research!