

Subject: building a spoken corpus and machine learning of disfluencies/ classification of laughter

Disfluency (such as filled pauses and self-repair) is a frequent phenomenon in natural speech. Studies have shown that disfluency has a regular form and has communicative functions. Laughter is a social vocalisation universal to all cultures and languages. Contrary to common belief, responding to jokes is only one function of laughter, and not the most frequent. It serves a variety of communicative functions and it interacts with language in a complex but regular way (Glenn, 2003). In the DUEL project (disfluencies, exclamations and laughter in dialogue), <http://www.dsg-bielefeld.de/DUEL/>, we have recorded and transcribed natural conversations in French, German and Mandarin Chinese. The current internship has two goals:

1. To work on the final stages of corpus construction: quality control of the transcription and annotation, gaining corpus metadata, data archiving and distribution.

2. To work on one of these two topics using machine learning:

- 2.1 automatic detection of disfluency in Chinese using machine learning. Following Hough & Schlangen (2015), we will work on automatic disfluency detection (based on transcribed speech data) using recurrent neural networks or a feature-based model.

- 2.2 classification of laughter types based on their form. Using data from the DUEL project (in Chinese or French), you will investigate if (and what) features of laughter (such as length, pitch, position of occurrence etc.) can predict the function of laughter.

To apply, you must have an interest in corpus and computational linguistics. To work on topic 2.1, you must be a native speaker of Chinese. Knowledge in Python and machine learning is desired.

References:

Glenn, P. (2003). *Laughter in interaction* (Vol. 18). Cambridge University Press. Hamblin, C. (1973). Questions in montague english. *Foundations of Language*.

Ginzburg, J., Fernández, R., & Schlangen, D. (2014). Disfluencies as intra-utterance dialogue moves. *Semantics and Pragmatics*, 7(9), 64.

Hough, J & Schlangen, D. Recurrent Neural Networks for Incremental Disfluency Detection. In *Proceedings of INTERSPEECH 2015*, Dresden, Germany, September 2015.