

Topics for MSc dissertations

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October 2018

My research area is multimodal communication, and I'm interested in any project dealing with how we can model the use of speech together with other communication modalities, e.g. head movements, facial expressions, hand gestures and body posture. I'm also interested in projects focusing on the way natural language processing can be adapted to deal with online multimedia content, e.g. words and emojis, or images and related textual descriptions.

Examples of recent dissertation topics (Experimental and NLP-oriented)

Chinese Segmentation using Deep Learning Methods
Multimodal features in video advertising
Gender effects on the perception of emotions
Automatic classification of the content of emojis in Twitter data

Two of the theses resulted in joint conference publications.

Examples of possible future projects

1. Determining sentiment in spoken multimodal data

Sentiment analysis is usually performed on written text using word features. In spoken multimodal data, vocal and gestural features are also available. Goals of this project will be i. to create a corpus to train classifiers that can predict sentiment in multimodal data (using available datasets is also a possibility, see e.g. <http://multicomp.cs.cmu.edu/resources/cmu-mosei-dataset/>); ii. to investigate how multimodal features from the corpus can be extracted and combined; and iii. to train and evaluate classifiers based on the corpus.

2. How emojis contribute to meaning

This project would look at how emoji content can be represented and used for NLP processing. I'm particularly interested in the issue of content ambiguity, in other words how much users agree about what emojis mean. A few existing datasets are available from: <http://knoesis.org/resources/Emoji2018/#section-agenda>.

A variation on this theme could be an experimental project that looks at ways in which emojis are processed and understood by users used to alphabetic vs. logographic writing scripts, e.g. by looking at the Stroop effect.

Other possibilities include working with embodied agents, multimodal corpora, image caption generation, dialogue act classification in multimodal data, etc.