Modeling Review Argumentation for Robust Sentiment Analysis

A shallow model of review argumentation for text classification

Many text classification approaches model a text at the lexical and syntactic level only.
- Effective for narrow-domain texts with explicit class information
- Not effective if class information is represented by an argumentation, as is often the case in reviews
- Not domain-robust
- Results hardly explainable

The first approach to capture the overall argumentation structure

Baseline features typically proposed for sentiment analysis:
- Word and part-of-speech n-grams
- Character trigrams
- SentiWordNet scores

Existing argumentation-based features focus on concentration measures
- Local sentiment frequencies and local sentiment at specific positions
- Combinations of discourse relations and local sentiment
- Combinations of domain concepts and local sentiment

Evidence that a more domain-robust sentiment analysis is achieved

Evaluation of sentiment analysis on two very different English review corpora:
- Hotel reviews, sentiment scale [1, 5] from Wachsmuth et al., CICLing 2014
- Movie reviews (Author a–d), scale [0, 2] from Pang and Lee, ACL 2005

On the poster: out-of-domain experiment with training on hotel reviews and test on movie reviews
More in the paper: in-domain experiments, detailed set-up, explainability, …

We model the argumentation of a review as a sequential flow of local sentiments that refer to domain concepts and that are connected by discourse relations.

A shallow model of review argumentation for text classification

Baseline features typically proposed for sentiment analysis:
- Word and part-of-speech n-grams
- Character trigrams
- SentiWordNet scores

Existing argumentation-based features focus on concentration measures
- Local sentiment frequencies and local sentiment at specific positions
- Combinations of discourse relations and local sentiment
- Combinations of domain concepts and local sentiment

Evidence that a more domain-robust sentiment analysis is achieved

Evaluation of sentiment analysis on two very different English review corpora:
- Hotel reviews, sentiment scale [1, 5] from Wachsmuth et al., CICLing 2014
- Movie reviews (Author a–d), scale [0, 2] from Pang and Lee, ACL 2005

On the poster: out-of-domain experiment with training on hotel reviews and test on movie reviews
More in the paper: in-domain experiments, detailed set-up, explainability, …