Statistical Consulting

Topic-specific sentiment analysis for tweets by German MPs

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New data sources offer vast potential for studying public opinion in the political environment. Frequently arising research questions concern the nature of topics discussed and the sentiment expressed toward them. We perform sentiment analysis for tweets by German MPs issued since the last federal election in September 2017, scraped from the Web, with special regard to topical context. The contribution of this work is twofold. First, we explore how such analysis can be conducted with either standard machine learning approaches for tabular data or more complex, BERT-based deep learning solutions. Our results suggest that casting the problem at hand as a standard machine learning task requires extensive feature engineering and achieves only moderate predictive performance, whereas BERT-based models yield satisfactory results for sentiment analysis. We further note that topic modeling does not aid classification in this application but attribute this largely to the difficulty of topic extraction. Second, we provide teaching material for instructing fellow researchers in the applied techniques. With this collection, which will remain publicly available, we hope to facilitate the entrance to NLP for practitioners from other disciplines.

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