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Feature-based Compositing Memory Networks for Aspect-based Sentiment Classification in Social Internet of Things

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Abstract

Sentiment analysis is an important research field in natural language processing. Aspect-based sentiment classification can efficiently slove fine-grained sentiment recognition, however, its classification accuracy becomes decreasing for large-scale corpus. To solve this problem, we propose a new memory network model, called Feature-based Compositing Memory Networks (FCMN). Differring from typical memory networks, we extract three kinds of features to enrich the word representation of each context word. We design compositing strategies combining feature representations and word embedding to improve the performance of attention mechanism. Experiments on laptops and restaurants datasets in SemEval 2014 show that our approach outperforms the feature-based SVM, TD-LSTM and Deep Memory Networks. Especially, FCMN gets better results with less hops than Deep Memory Networks. Experiments results demonstrate that FCMN can ignore words without sentiment and pay more attention on correct words in a sentence.

Keywords: Sentiment Analysis, Memory Networks, Aspect-based Sentiment Classification, Attention Mechanism

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