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Aspect-Level Sentiment Analysis with Multi-Channel and Graph Convolutional Networks

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Abstract : The purpose of the aspect-level sentiment analysis task is to identify the sentiment polarity of aspects in a sentence. Currently, most methods mainly focus on using neural networks and attention mechanisms to model the relationship between aspects and context, but they ignore the dependence of words in different ranges in the sentence, resulting in deviation when assigning relationship weight to other words other than aspect words. To solve these problems, we propose a new aspect-level sentiment analysis model that combines a multi-channel convolutional network and graph convolutional network (GCN). Firstly, the context and the degree of association between words are characterized by Long Short-Term Memory (LSTM) and self-attention mechanism. Besides, a multi-channel convolutional network is used to extract the features of words in different ranges. Finally, a convolutional graph network is used to associate the node information of the dependency tree structure. We conduct experiments on four benchmark datasets. The experimental results are compared with those of other models, which shows that our model is better and more effective.

Keywords : aspect-level sentiment analysis, attention, multi-channel convolution network, graph convolution network, dependency tree
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