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Context-Augmented Convolutional Neural Networks for Twitter Sarcasm Detection

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Abstract

Sarcasm detection on twitter has received increasing research in recent years. However, existing work has two limitations. First, existing work mainly uses discrete models, requiring a large number of manual features, which can be expensive to obtain. Second, most existing work focuses on feature engineering according to the tweet itself, and does not utilize contextual information regarding the target tweet. However, contextual information (e.g. a conversation or the history tweets of the target tweet author) may be available for the target tweet. To address the above two issues, we explore the neural network models for twitter sarcasm detection. Based on convolutional neural network, we propose two different context-augmented neural models for this task. Results on the dataset show that neural models can achieve better performance compared to state-of-the-art discrete models. Meanwhile, the proposed context-augmented neural models can effectively decode sarcastic clues from contextual information, and give a relative improvement in the detection performance.

Keywords: Twitter sarcasm detection, contextual information, discrete features, convolutional neural network

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