

Multi-Level Attentional Network for Aspect-Based Sentiment Analysis

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Abstract : Aspect-based Sentiment Analysis (ABSA) has attracted much attention due to its capacity to determine the sentiment polarity of the certain aspect in a sentence. In previous works, great significance of the interaction between aspect and sentence has been exhibited in ABSA. In consequence, a Multi-Level Attentional Networks (MLAN) is proposed. MLAN consists of four parts: Embedding Layer, Encoding Layer, Multi-Level Attentional (MLA) Layers and Final Prediction Layer. Among these parts, MLA Layers including Aspect Level Attentional (ALA) Layer and Interactive Attentional (ILA) Layer is the innovation of MLAN, whose function is to focus on the important information and obtain multiple levels' attentional weighted representation of aspect and sentence. In the experiments, MLAN is compared with classical TD-LSTM, MemNet, RAM, ATAE-LSTM, IAN, AOA, LCR-Rot and AEN-GloVe on SemEval 2014 Dataset. The experimental results show that MLAN outperforms those state-of-the-art models greatly. And in case study, the works of ALA Layer and ILA Layer have been proven to be effective and interpretable.

Keywords : deep learning, aspect-based sentiment analysis, attention, natural language processing

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