Aspect-based Sentiment Analysis via Virtual Node Augmented Graph Convolutional Networks

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1 Parameter sensitivity

Fig. 1 illustrates the performance of ViGCN at different SRD thresholds φ from 1 to 10. As the SRD threshold φ increases, the performance gradually rises to the highest value and then declines gradually. A possible reason is that when φ is too small, the model cannot capture enough information from the local context. On the contrary, when it is too large, noise may be introduced into the global information preserved by model.

Fig. 2 shows the experimental results of different numbers of ViGCN layers from 1 to 8. The model achieves the best performance with a ViGCN layer of 2 on all the three datasets. Hence, when the number of layers is 1, the model cannot capture enough sentence information, whereas when this number is too high, information redundancy and over-smoothing will deteriorate the model's performance.
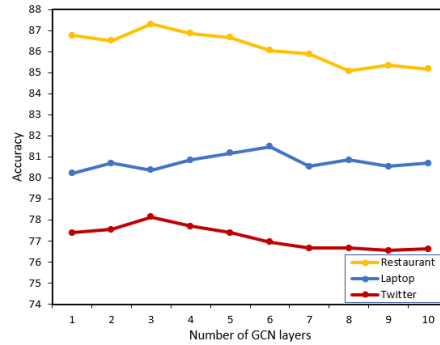

Fig. 1. Overview of the proposed virtual node augmented graph convolutional network.