**CONCLUSIONS**

In this work, the multiple emotions detection problem in OSNs was studied based on multi-label learning. On the basis of the observations on an annotated Tweet dataset, we discovered the emotion label correlation and social correlation as well as the temporal correlation in OSNs. Furthermore, a factor graph model is introduced to incorporate the above correlations into a general framework for multiple emotions detection. Then we proposed a multi-label learning algorithm to address the problem. The conducted experiments show that our proposed approach outperforms other existing baselines. The study of emotion detection in online social networks achieves several cheerful results by considering contextual information, such as temporal information, social information, etc. The proposed model can be flexible to work in the circumstance when some factor functions were absent. However, we shall also mention some limits of the work and the possible future directions. Our proposed model is only tested on a small scale dataset. As we all know, annotating data is very time-consuming. Due to the limit of manpower, we can only annotate limited number of users to form the dataset. The annotating process also lacks retrospective check. In the next step, we may annotate larger scale higher quality dataset or adopt semi-supervised learning approaches to detect emotions in online social networks. In addition, as emotion is time series data, we may apply advanced technique to detect users’ emotional states, such as LSTM, attention based neural network, etc.