



Fig. 7: Parameter sensitivity w.r.t. the dimension of embedding layers, α , λ_1 , λ_2 , and λ_3 .

7 CONCLUSIONS

In this paper we study the problem of predicting sentiment links in absence of sentiment related content in online social networks. We first establish a labeled, heterogeneous, and entity-level sentiment dataset from Weibo due to the lack of explicit sentiment links. To efficiently learn from these heterogeneous networks, we propose Signed Heterogeneous Information Network Embedding (SHINE), a deep-learning-based network embedding framework to extract users' highly nonlinear representations while preserving the structure of original networks. We conduct extensive experiments to evaluate the performance of SHINE. Experimental results prove the competitiveness of SHINE against several strong baselines and demonstrate the effectiveness of usage of social relation and profile information, especially in cold start scenario.

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