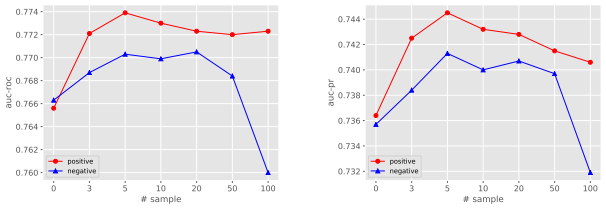
SUPPLEMENTARY

Parameter Sensitivity

In order to better understand the efficacy of the proposed dynamic positive sampling, we investigate the sensitivity of the number of sampling cases. We vary the number of samples from 0 to 100 for positive sampling and negative sampling respectively and we conduct link prediction experiments on MovieLens dataset for sensitivity evaluation. The experiment results are indicated in Figure 5. We can observe that a model with the positive sampling can outperform a model with only the negative sampling and the optimal performance can be achieved with a number of positive sampling cases around 5. Therefore, the rationality of the proposed dynamic positive sampling is proved once again.



(a) AUC-ROC w.r.t. # Sample (b) AUC-PR w.r.t. # Sample

Figure 5: Link prediction performance w.r.t. # Sample. The horizontal axis represents the number of samples and the vertical axis is the respective AUC value. The red line and the blue line stand for the performance of BiANE model with varying positive samples and varying negative samples respectively.