

An Empirical Evaluation of Approaches for Link Prediction

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Abstract—Link prediction plays an important role in many domains like social networks and recommender systems. Despite the fruitful approaches have been developed for link prediction, there is a lack of comprehensive empirical evaluation of these approaches. In this paper, we divide the approaches for link prediction into two categories: the heuristic-based and the learning-based approaches, and we carry out an empirical evaluation of eighteen approaches. The practical effectiveness of these approaches is assessed on six real-life datasets with different properties. This may help researchers to have better understanding of existing link prediction approaches as well as provide a guide for the selection of approaches in real applications, such that researchers have a good starting point to work in this field.

Keywords—Link prediction, Similarity score, Graph learning