

Knowledge Graph – Enrich the Results in Search Engine and Recommender System

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Nowadays, with the rapid increase in the amount of data on internet, we are facing the information explosion problem. The data, including unstruct data, semi-struct table data and struct data of the enterprise systems, becomes a big challenge for users to extract useful information and make a good choice. Knowledge Graph (KG) has been proposed to discover the relation information with the property of powerful language understanding and rapid data analysis. It is first proposed in 2012 by Google, a theory of semantic structure combining applied mathematics, computer graphics, information visualization and machine learning. With the help of KG, users can get a more accurate recommendation as well as the explanations for recommended items [1]. Recently, multiple KGs have been proposed, such as Freebase [2], DBpedia [3], YAGO [4], and Google's Knowledge Graph [5].

KG has been widely used in many intelligent systems such as Automatic QA (Question and Answer) and Document Representation. The author of the present talk will focus on the use of search engine and recommender system. I will first talk about the concepts of the graph. Secondly, I will present the current pathfinding and graph search algorithms. Then I will discuss how to use KG with the embedding based algorithm to improve the results in search engine and recommender system. At last, I will present some experimentation results and perspectives from my current research project.

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