Building Knowledge Graph for Products at Scale and Infusing it in to LLMs

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Abstract

A knowledge graph is the key to entity search as it can store the factual entity related information in a structured manner without the rigidity of a fixed schema. Both Google and Bing have web scale knowledge graphs and for a large fraction of user queries knowledge graph is invoked. E-commerce search is primarily an entity search. Therefore, building a Knowledge Graph is the key to improve the e-Commerce search in many ways. However, building it at web scale is a highly challenging problem. It is an equally or even more challenging problem to build the knowledge graph for products. In this talk, we present our methodology to build the knowledge graph for products at web scale. With recent success of LLMs, can we infuse such semantic understanding of the world, encoded in the form of Knowledge Graph, in the LLMs? There are some advances in this direction, however it remains an open question if the Knowledge graphs can be replaced by the LLMs.

Keywords

Knowledge Graph, Large Language Model, E-commerce search

Biography

Dr. Manoj Agarwal is Senior Staff Engineer in Discovery Intelligence team at Uber AI. Before Uber, he was Principal Applied Scientist at Microsoft – AI and Research and a senior researcher in IBM Research. Manoj was the chief architect for building a web scale product knowledge graph for Microsoft – Shopping, comprising a few hundred million products and a few billion facts with high accuracy. Currently, he is engaged in the efforts to build the scalable knowledge graph as well as discovering the taxonomy to improve the semantic search and recommendations for Uber Delivery. His research interests are in the areas of web mining, graph mining, pattern recognition, data mining, knowledge graphs, LLMs and information retrieval with more than 30 patents and over 25 research papers in reputed journals and conferences.