

Issues and challenges in semantic question answering through natural language interface.

ABSTRACT

Semantic question answering demand different processing compared to the common information retrieval based question answering method because the semantic knowledge base is stored in the triples form. However, manipulating the knowledge requires understanding its structure and proficiency in semantic query language such as SPARQL. Natural language interface alleviates this by allowing user to input question in their human language and produce an answer by translating the input into an equivalent SPARQL before it is executed to retrieve the answer. However, several challenges exist such as concept identification, compatible ontology triple construction and semantic mapping. Existing studies have focused mainly on the semantic disambiguation such as through consolidation where user interaction is initiated so that relevant concept can be chosen by the user to be inserted into the SPARQL. In this paper we focus on the linguistic challenge in NLI, specifically on the question complexity depth, processes that need to be performed to answer the question and gaps in existing study. It is concluded that more works are in demand to process complex questions such that involve multi-variables and multi-triples. Besides the issues posed by the answer generation for the combined sub-questions in the composite question, the challenges faced by the simple question is also inherited which requires an application that is robust in ontology concept annotation. This will ensure that the translated query would capture entirely the expression in the original question and accurate answer will be returned.

Keyword: Semantic question answering; Natural language Interface; SPARQL.