Natural language query translation for semantic search

ABSTRACT

Querying semantic knowledge base often requires the understanding of the ontology schema and proficiency with the query language. Several approaches have existed but mainly dealing with the disambiguation problem which are solved by executing clarification dialogues. This paper addresses the automatic translation of natural language queries into its SPARQL equivalent statement without involving clarification dialogues. We demonstrate that this is achieveable by annotating all ontology concepts in the query. Next the connections between the classes are identified so that the shared properties can be loaded before they are matched with the terms in the query. Then, the identified ontology triples are arranged to construct a valid SPARQL query according to their relation in the ontology schema. We compare the performance of MyAutoSPARQL against FREyA, an NLI that utilizes clarification dialogue. We evaluate our approach on selection typed queries and compare the performance against FREyA. The results show that despite the absent of clarification dialogues, MyAutoSPARQL performance is better than FREyA.

Keyword: Semantic search; Natural language queries; Natural language interface; SPARQL