Abstract

The data available on the World Wide Web is assumed to be humongous and infinite. Search Engines have emerged to be integral tools of information retrieval from the web. The current search engines available process queries and produce results based on the location and information occurrence on the web pages providing unsatisfactory results [8]. Web 3.0 and the semantic web incorporated data on the web in machine readable form providing better search results. This paper introduces a semantic search framework named Semantic Search Framework using Semantic Web Services (SSFSWS) built on service oriented architecture (SOA) targeted to enhancing search responses. The framework consists of semantic search providers offering semantic search services. The semantic search services are composed using the depth first search algorithm. The semantic search services offered rely on the RDF data and its corresponding Ontologies built to provide search responses. An OWL2 language namely SROIQ-DL is considered to build the ontologies and represent complex description logic that exists in the RDF data. The framework also introduces effective caching strategies adopted to improve response times. The framework introduced provides ranking schemes based on the ontology relevance scores of the responses observed. A prototype
implementation of the SSFSWS is discussed and its benefits over the existing semantic search engine are clearly discussed in this paper.

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Index Terms

Computer Science

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Keywords

Semantic Web  Semantic Web Search  SOA  Ontologies  OWL 2  Semantic Web Services  Semantic Web Service Composition