Enriching Concept Search across Semantic Web Ontologies
Chetana Gavankar\textsuperscript{1}, Vishwajeet Kumar\textsuperscript{3}, Yuan-Fang Li\textsuperscript{2}, Ganesh Ramakrishnan\textsuperscript{3}
\textsuperscript{1} IITB Monash Research Academy, IIT Bombay, Powai, Mumbai, India
\textsuperscript{2} Faculty of Information Technology, Monash University
\textsuperscript{3} Department of Computer Science and Engineering, IIT Bombay

e-mail: chetanagavankar@gmail.com
url: http://www.iitbmonash.org

Abstract

• Semantic Web ontologies are fast-growing knowledge sources on the Web.
• Searching relevant concepts from this large repository is a challenging problem.
• Current Semantic Web search engines provide either (1) coarse-grained search over ontologies or (2) very fine-grained search over individuals.
• Searching and ranking concepts across ontologies provides an ideal granularity for certain tasks such as ontology population and web page annotation.
• Towards this objective, we propose a novel approach of indexing concepts using ontology axioms in an inverted file structure and ranking them using a dynamic ranking algorithm.

System Flow

Conclusion and Future work

• We present an approach of searching for concepts using semi-structured keyword queries that incorporates contextual features to improve precision.
• A preliminary evaluation and a comparison with BioPortal’s search function shows the effectiveness of our system.
• Our proposed method is generic and domain-independent
• In future we will investigate the incorporation of ontology reasoning to include implicit contextual features.
• Currently the ranking algorithm derives feature weights heuristically. Going ahead we will learn the weights using machine learning methods.

In addition to enriched concept search, our further work will also include property search across ontologies.

References