Instance-based Matching of Large Ontologies

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Abstract

Ontologies are increasingly used to semantically categorize data and content. Hence there is an increasing need to match (align) and merge related ontologies, e. g., for data integration or enhanced data analysis. Semi-automatic ontology matching has been an active research area in the last decade and many tools have been developed. The benchmark results of the OAEI (Ontology Alignment Evaluation Initiative) illustrate the current state of the art and indicate significant improvements over the years. Still there are many open challenges in particular for matching large ontologies, such as product catalogs, web directories, or large biomedical ontologies. We illustrate some of the match problems and discuss possible match techniques. In particular, we present different instance-based match approaches and their combination with metadata-based matching. Furthermore, we analyze the influence of ontology evolution on ontology mappings, especially the results of instance-based matching.

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