

ABSTRACT

An ontology aims to provide people and software agents with a common understanding of the structure of information that describe a domain of interest, with a set of concepts and the relations between them, making it similar though not the same as conceptual data schemas.

An upper ontology, and sometimes called a foundation ontology, is an ontology that formally defines the most top level concepts among other ontologies. Upper ontologies are domain independent and intend to capture and represent the semantics of the real world to support large applications. Obviously, and since they only capture the most general concepts, upper level ontologies have less concepts than other domain specific ontologies. But on the other hand, upper level ontologies are not easy to build. They require deep understanding, analysis and realizing for which might be considered an upper concept to be included in the upper ontology and which might not. Thus constructing an upper ontology is a multidisciplinary issue, concerning not only computer science, but philosophy and linguistics as well.

This thesis aims to contribute to the construction of the Top-Levels of the Arabic language ontology. The proposed methodology includes studying existing other upper-level ontologies, especially DOLCE, BFO and SUMO, as well as briefly reviewing literature of some Arab Philosophers. The Arabic concepts will be chosen in a way to assure that the top levels of the Arabic ontology are completely based on the conceptualization of the Arabic language. The importance and the use of these top levels is that they govern the quality of the lower levels, as well as they help (i.e. from a methodology point of view) in the building process of the lower levels. As explained earlier, the complexity of deciding the top level concepts, is that these concepts are more abstract, and thus more application (and maybe) language independent, and require deep investigation in order to be agreed upon. Such

investigations need philosophical sense, rather than linguistic knowledge. Also, a background in first-order-logic and set theory is necessary to precisely and formally specify the top level ontology. Technical IT knowledge is also important to understand how the ontology might be applied in practice.