An approach for automatic expressive ontology construction from natural language.

Summary: In this paper, we present an approach based on ontology learning and natural language processing for automatic construction of expressive ontologies, specifically in OWL DL with ALC expressivity, from a natural language text. The viability of our approach is demonstrated through the generation of descriptions of complex axioms from concepts defined by users and glossaries found at Wikipedia. We evaluated our approach in an experiment with entry sentences enriched with hierarchy axioms, disjunction, conjunction, negation, as well as existential and universal quantification to impose restriction of properties. The obtained results prove that our model is an effective solution for knowledge representation and automatic construction of expressive Ontologies. Thereby, it assists professionals involved in processes for obtain, construct and model knowledge domain.

Keywords: description logic (DL); ontology; ontology learning; PLN

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