THE PROBLEM OF AUTOMATED BASE ONTOLOGY DEVELOPMENT

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The purpose of this article is to develop the method of automated designing base ontology and evaluating its quality. The idea that underlies in the automated development of ontology is that the processed texts with the knowledge of subject area are used to obtain data to complete the existing ontology. At the same time, the intermediate ontology is used for text processing of subject area. The result is a recursive process that can be considered as self-education of the system. Learning can be both automated and semi-automated with the help of a teacher. In process of education of the system, the need for a teacher will disappear and the process will be completely automated. The initial ontology with the basic concepts of subject area and commonly used terms should be defined a priori.

Ontology in OWL provides the conceptual framework of the top-level and of the subject area. Top-level ontology provides new knowledge inference, fills up received messages with a context; verifies the truth of received messages; assesses probability of sources messages; Ensures logical integrity of Database.

Machine Learning is realized by Java API Protégé-OWL means. These means have their Library Classes where methods of work with OWL-structures are done: reading and additions. In this way, Machine Learning means work in interaction with OWL-ontology, taking her models of grammatical and semantic structures for statements recognition (logic predicates of 1st order) in investigational and/ or educational texts and adding to OWL-ontology new elements as a result of such recognition. Link Grammar Parser (LGP) is used for this procedure, which divides an affirmative English grammatically correct written sentence to semantically linked word pairs. LGP provides table of compliance between grammatical English structures and types of syntactic and semantic links between words (concepts). API LGP allows to link this table with OWL-ontology, and due to which the table can dynamically adopt to the suggested subject field in the learning process.

Keywords – ontology, learning ontology's, automatic development, knowledge base, text document.