Selected algorithms

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1 Triple extraction from dependency graph

The dependency graph is the best way to extract triples from questions using parsing tools. The parse structure tree is also often used in addition to the dependency graph.

The main tool about Stanford dependency tree is the *Stanford typed dependencies manual* :

> Marie-Catherine de Marneffe and Christopher D. Manning. *Stanford typed dependencies manual*. 2013. `http://nlp.stanford.edu/software/dependencies_manual.pdf`

Some interesting topics :

- `http://grokbase.com/t/opennlp/dev/139t2prbve/triplet-extraction-with-opennlp`
- `http://stackoverflow.com/questions/9595983/tools-for-text-simplification-java`
- `http://stackoverflow.com/questions/2712609/stanford-parser-traversing-the-typed-dependencies-graph?rq=1`

The objective is to understand enough the output of the Stanford parser (dependency tree) and then to implement an algorithm that extract triples from trees.

2 Triple extraction from parse structure tree

Using only the parse structure tree is far from being efficient, however some (very basics) algorithms exist :

> Delia Rusu, Lorand Dali, Blaž Fortuna, Marko Grobelnik, Dunja Mladenić. *Triplet extraction from sentences*. 2007. `http://ailab.ijs.si/delia_rusu/Papers/is_2007.pdf`

> Aaron Defazio. *Natural Language Question Answering Over Triple Knowledge Bases*. 2009. `http://users.cecs.anu.edu.au/~adefazio/TripleQuestionAnswering-adefazio.pdf`

This approach can be implemented if the previous one (dependency tree) totally fail.

3 From triples to database queries

How mapping subject, predicate and objects to Wikidata entities. See part 2.2 of :

> Hakimov, Sherzod and Tunc, Hakan and Akimaliev, Marlen and Dogdu, Erdogan. *Semantic Question Answering System over Linked Data Using Relational Patterns*. 2013. `http://edogdu.etu.edu.tr/wp-content/uploads/2005/01/2013-semantic-qa.pdf`