/erb0WL

Verbalisation of Afrikaans OWL 2 DL Ontologies

PROBLEM

Ontologies provide information about objects and relations between objects and is represented in a formal language. However, it can be difficult for end users to read formal languages. To make it more accessible, ontologies can be verbalised into natural language sentences.

OBJECTIVES

- Investigate two different approaches to verbalising OWL 2 DL ontologies.
- Determine if these approaches can be used to verbalise ontologies into Afrikaans sentences.

```
lion ⊆ animal
```

serialises as:

<owl:Class rdf:about="&AfricanWildlifeOntology1;lion"> <rdfs:subClassOf rdf:resource="&AfricanWildlifeOntology1;animal"/> </owl:Class>

TEMPLATE-BASED APPROACH

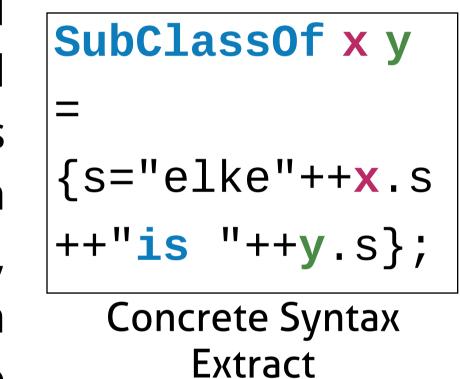
<Text>Elke</Text> <0bject index="0"/> <Text>is 'n</Text> <0bject index="1"/>

SubClassOf Template

Each axiom in the ontology has a direct mapping to a template which outlines structure of the the generated sentence. The template has nodes into which the OWL objects and properties can be inserted.

GRAMMAR-BASED APPROACH

Axioms are pre-processed and fed into Grammatical Framework (GF). GF contains function definitions for each axiom in the abstract syntax, and a concrete syntax which uses these definitions to form language specific sentences.



Elke leeu is 'n dier. 'Every lion is an animal.'

Example Output Sentence

CONCLUSIONS

- It is possible to verbalise OWL 2 ontologies in Afrikaans.
- Simple axioms are more likely to be verbalised into grammatically correct sentences.
- Complex axioms (involving nested class expressions) are more difficult to verbalise into grammatically correct sentences. They require more manipulation of the code.



University of Cape Town

Computer Science Department Private Bag X3 Rondebosch 7700 Tel: 021 650 9111

Team members Lauren Sanby

Dr Maria Keet Ion Todd

Supervisor

Project website

http://people.cs.uct.ac.za/~tddion001

