

TRILL and TRILL^P Manual

OWL to PL Translation

For translating an OWL file into the corresponding PL file, exploit the Thea2 library by simply calling `swipl` with the following command

```
swipl -t "[library('thea2/owl2_io')],  
load_axioms('<OWL_file_name>'), save_axioms('<PL_file_name>',pl)."
```

Probability information

TRILL and TRILL^P

For specifying the probability information, a predicate `p/2` is used. For example, in order to specify that the axiom *E* is associated with a probability of 0.3 the following has to be stated:

`p(E, 0.3)`

`p(subClassOf(cat, pet), 0.4)` means that the subclass axiom is associated with a probability of 0.4.

TRILL for SWI-Prolog

For specifying the probability information, a predicate `annotationAssertion/3` is used. For example, in order to specify that the axiom *E* is associated with a probability of 0.3 the following has to be stated:

```
annotationAssertion('https://sites.google.com/a/unife.it/ml/dispon  
te#probability', E, literal(0.3))
```

`annotationAssertion('https://sites.google.com/a/unife.it/ml/dispon
te#probability', subClassOf(cat, pet), literal(0.4))` means that the subclass axiom is associated with a probability of 0.4.

Type of queries

TRILL and TRILL^P allow the following queries:

`sub_class(Class, SupClass, Expl)`

`instanceOf(Class, Ind, Expl)`

`unsat(Concept, Expl)`

`inconsistent_theory(Expl)`

which return the explanation for the given query.

`sub_class(Class, SupClass)`

`instanceOf(Class, Ind)`

`unsat(Concept)`

`inconsistent_theory(Expl)`

which return true if the query is entailed in the knowledge base, false otherwise.

`prob_sub_class(Class, SupClass, Prob)`

prob_instanceOf(Class,Ind,Prob)

prob_unsat(Concept,Prob)

prob_inconsistent_theory(Prob)

which compute the probability of the query and return its value.

TRILL^P also allows

sub_class(Class,SupClass,Expl,Prob)

instanceOf(Class,Ind,Expl,Prob)

unsat(Concept,Expl,Prob)

inconsistent_theory(Expl,Prob)

which return the pinpointing formula and the probability of the query.