ASSAM

Automated Semantic Service Annotation with Machine Learning

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http://moguntia.ucd.ie/projects/annotator/

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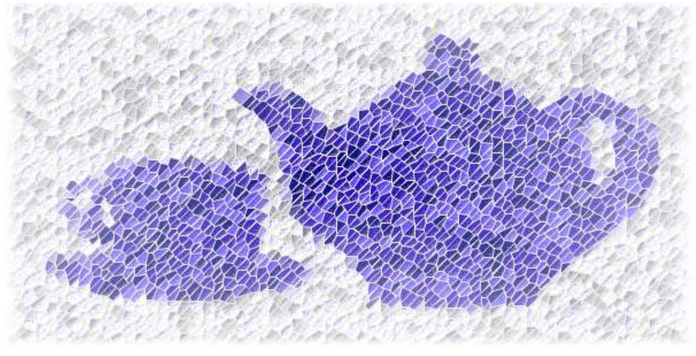


Motivation

The Vision

The vision of semantic Web Services is to provide the means for fully automated discovery, composition and invocation of loosely coupled software components.

The Reality

However, software engineers who are developing Web Services usually do not think in terms of ontologies, but rather in terms of their programming tools. Existing tools for both the Java and .NET environments support the automatic generation of WSDL.

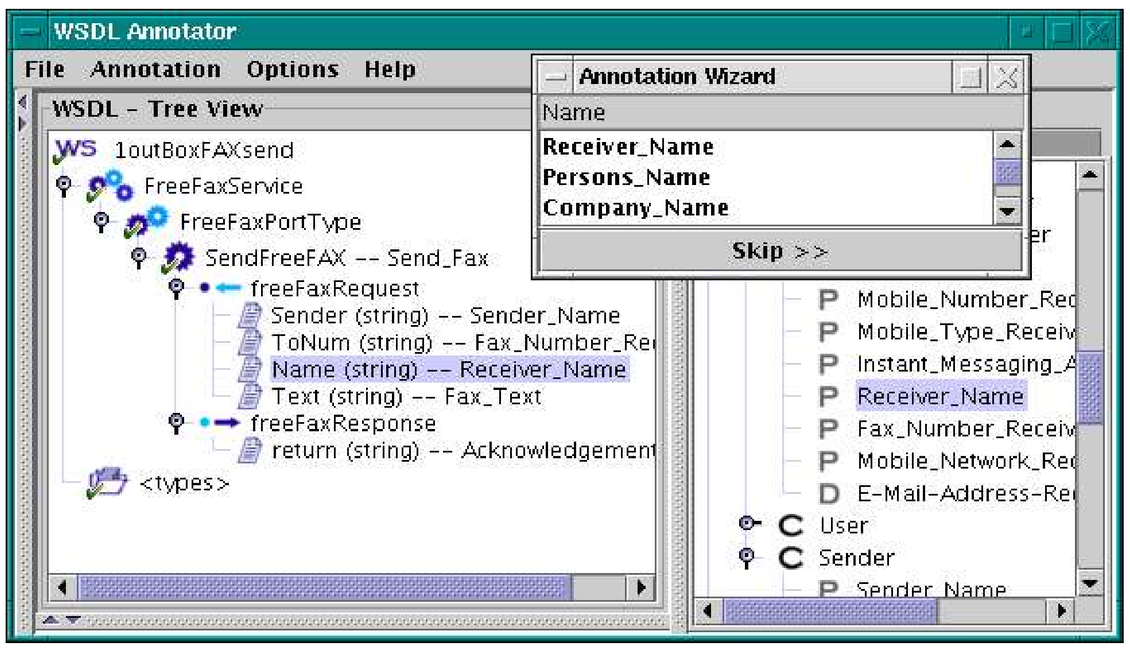
The Tools

We believe that it would boost the semantic service web if similar tools existed to (semi-) automatically generate OWL-S or a similar form of semantic metadata.

Features

Import

The ASSAM Annotator imports WSDL as usually automatically generated by programming tools or IDEs. The ASSAM Annotator also imports previously created domain and concept ontologies.



Annotation

The user can annotate the imported WSDL with concepts from the ontologies by means of a point-and-click interface.

Classification

The key feature of ASSAM is, however, that it can recommend possible annotations to the user by means of relational learning based on previously annotated services. While fully automated annotation is still in the far future, a human annotator can save a considerable amount of time when choosing only from a few possible annotations rather than the complete ontology.

Export

The final annotations can be exported into OWL-S. Unlike other tools ASSAM can not only generate a syntactic transformation, but also generate mappings from WSDL to ontology concepts.

Summary

The ASSAM Annotator can help developers integrating their legacy web services into the semantic service web. Its features are:

- Import WSDL
- Import domain ontologies
- Recommend annotations based on text classification
- Export OWL-S

The ASSAM Dataset

Our corpus of semantically annotated web services is available for research purposes from our website http://smi.ucd.ie/RSWS

References

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[3] Hess, A., Johnston, E., Kushmerick, N.: Semi-Automatically Annotating Semantic Web Services. In: VLDB Workshop on Information Integration on the Web (IIWeb2004), Toronto, Canada

[4] Hess, A., Kushmerick, N.: Machine Learning for Annotating Semantic Web Services, AAAI Spring Symposium Semantic Web Services 2004, Stanford, California, USA

[5] Hess, A., Kushmerick, N.: Learning to Attach Semantic Metadata to Web Services, 2nd International Semantic Web Conference, Sanibel Island, Florida, USA

[6] Hess, A., Kushmerick, N.: Automatically Attaching Semantic Metadata to Web Services, IJCAI Workshop on Information Integration on the Web (IIWeb2003), Acapulco, Mexico