

Master's Project Title:

Ontology-Based Remote Service Registration and Discovery Using JAX-WS

Presentor: Harmeet K. Chawla

Thesis Advisor : Haiping Xu

Thesis Committee : Dr. Boleslaw Mikolajczak

Thesis Committee : Dr. Ramprasad Balasubramanian

Time: Friday, Dec. 11, 2009, 4:00 Place: Dion 101

Abstract:

OWL-S/UDDI works as a yellow page for ontology-based semantic web services, where an OWL-S file consists of an OWL-S profile, a process model and grounding information. Current implementations of OWL-S/UDDI require that the major operations such as service registration and service discovery be performed either through a web page or on the same machine where the OWL-S/UDDI is installed. This makes it inconvenient for service providers and service consumers to publish and discover services remotely and dynamically. In this project, we use web services to wrap the OWL-S/UDDI functionalities for remote service registration and service discovery. Using our framework, a service provider can register a web service with a remote OWL-S/UDDI using an OWL-S profile; while a service consumer can remotely search for a web service using an OWL-S profile template. Once a service profile is retrieved from the remote OWL-S/UDDI, the complete OWL-S file becomes available, and the grounding information is automatically extracted. With the grounding information of the searched web service, the service client can invoke the web service dynamically. We implement a prototype framework using Java API for XML Web Services (JAX-WS), which is a Java programming language API for creating document-style web services. A mutual fund service example is provided to demonstrate the feasibility of our approach.