Automatic Generation of Web Service Interface based on Semantic Annotation

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Abstract

Web services allow different applications from different resources to communicate with each other using open standards [18]. The interoperability of web service technology makes web services widely used not only for bioinformatics and business but also for other purposes. However, web services are designed for software use not for direct human access. Therefore a system was developed in this project that can automatically generate web interfaces for human users to invoke web services. The interface for a web service is generated based on WSDL document of the web service. However, we found that the interface generated by using WSDL file alone will not be as well adapted for each individual service. Therefore we explored the use of semantic annotations for enhancing the generated web interfaces so that the generated web interfaces can assist human users to invoke web services in a more efficient way. With semantic annotation, the developed system allows users to invoke any web service they want since the web interface is generated at the run-time for that web service. Meanwhile, semantic annotations for that web service are requested from a annotation search web service to provide additional descriptions for each operation and its parameters. Besides that, the system allows users to control the presentation of parameters and results in the generated web interfaces.