Modeling and Reasoning About User Preferences in Service-Oriented Architectures

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Abstract

Service-Oriented Architectures and Web service technologies are the growing trend in software architectures to build platform-independent software components. Web services implement in fact specific piece of functionalities which can be world-wide advertised, accessed, and consumed by users.

In this context, service discovery and selection play an important role w.r.t. the search and selection of the most suitable services users are looking for. However, with the rapidly growing number of services that are becoming available, users will be offered with a choice of functionally similar services, which increase the need of enhancing traditional discovery and selection processes with the possibility for the users to express preferences about and relevant to certain services. By other hand, expressing and reasoning about user preferences is a complex and challenging task as preferences cannot be generally explicitly expressed because of the large number of possible alternatives. Nonmonotonic reasoning offers flexible preference handling methods which allow compact preference representation and reasoning methods, but their use in service-oriented domain has not yet been investigated.

This proposal will draw on recent work from the technologies areas of Web services, Semantic Web services, and nonmonotonic reasoning. Each of these areas provides elements of existing work which could be re-used, but none of them currently provides a well-founded, usable framework for modeling and reasoning about user preferences in a service-oriented architecture. In this context this thesis proposal proposes a framework and an enabling architecture that glue service-oriented technologies and user preference representation and reasoning methods together, in enhancing service discovery and selection by means of user preferences.