Preface

Web services have become a core feature that developers expect from any web application. A leading service and mashup directory, ProgrammableWeb, reports that the number of web services has been steadily increasing since 2008. In spite of this increase several problems are starting to surface: design quality suffers from common mistakes, development cost is typically high due to lack of collaboration and reuse, integration with other services is difficult because of lack of semantic service descriptions, sharing with other developers and users is not well supported, and the social requirements to enable community-based validation of services are not well understood or met. For example, developers often violate REST architectural principles when implementing web services, use ad-hoc properties to describe them, and publish them in HTML and other nonmachine processable forms. Service descriptions usually lack any metadata information about the developers who created them and the purpose and usage criteria of the service. All these problems make it increasingly difficult to share services and to automatically discover, reuse and assess their quality, and hence obstruct the creation of service mashups and integrated applications. Lack of shareability and reuse also result in higher development and maintenance costs of web services.

Two active research areas can work together in addressing these issues: intelligent web services and social computing. Intelligent web services research is focused on developing intelligent agents for automating various service tasks such as discovery, composition, and mediation by leveraging AI techniques including knowledge representation, logical reasoning and problem-solving methods. Traditionally this work has provided sophisticated automation methods, and assumed that intelligent agents can ultimately replace users’ activities. On the other hand, the relatively new field of social computing is motivated by evidence that some complex problems can be solved by internetworked people more quickly and effectively than by sophisticated AI programs alone. This research offers new insights into how to create social platforms to collaboratively support various computational activities, in many cases utilizing AI techniques that have played a central role in knowledge representation, information sharing and cognitive agents. Social computing is a promising approach for dealing with the issues and obstacles mentioned above, which require a better understanding of user and community behaviour and related computational challenges.

This AAAI spring symposium sought to foster new inter-disciplinary collaborations from the research communities that jointly underpin intelligent web services and social computing, including web services, agents, semantic web, linked open data, social networks, and web science. It provided a unique venue for discussing and organising relevant future research and development directions.
The topics of the symposium included the following:

Social and technical requirements for collaborative web service development
Platforms and user interfaces for crowdsourcing web service development, and verification
Techniques for contextualized reviewing and rating of web services
Methods to incentivize, boost, and influence community participation throughout the lifecycle of web services
Methods to define and mashup service descriptions with Linked Data vocabularies
Systems and techniques for context- and social-based recommendation of web services
Methods for collaborative authoring of semantic annotations (for example RDFa, SAWSDL)
Argumentation frameworks and norms for reaching consensus on service implementation, description, and integration
Trust in collaborative web service construction
Mining, monitoring and analysis of behaviour and activities of web service online communities (such as ProgrammableWeb, and Seekda)
Analysis of web service usage patterns and associated social and technical parameters
Extraction of web service descriptions from tags
Case studies for use of social computing to construct and manage web services

— Tomas Vitvar, Harith Alani, and David Martin
Symposium Chairs