

Report of the AAAI 2009 Spring Symposium on Social Semantic Web: Where Web 2.0 Meets Web 3.0

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Abstract: Social Semantic Web is an emerging research area as the result of the interaction between Social Web (known as Web 2.0) and Semantic Web (known as Web 3.0). Aiming at fostering the Social Semantic Web, this AAAI symposium is highlighted by live interactions between industrial practitioners and academic researchers on the real-world grand challenges in this area.

Web 2.0 (aka. social web) applications such as Wikipedia and FaceBook, are well-known for promoting fast-growth of online data via network effects. Meanwhile, emerging Web 3.0 applications, driven by semantic web technologies, offer powerful data organization, integration, and query capabilities. The Symposium on Social Semantic Web investigates joining the strength of data growth power of Social Web and data organization power of the Semantic Web to address real world problems. A special highlight of this symposium is a good number of participants from leading Social/Semantic Web companies such as Vulcan, Yahoo, Oracle, Metaweb (freebase.com), Radar Network (twine.com), Franz, BAE System and InfoSys.

Several interesting themes have been observed in this symposium. One focus is on how AI semantic technologies, especially knowledge representation (KR) and data mining, can benefit social web. As data on the social web grows, the need for encoding and organizing complex semantics, such as person identity, community structure, time and location, also grows. KR based approaches have been presented to encode such complex semantics; moreover, inference problems, such as integrity checking and default reasoning, are discussed. A number of data mining approaches have been reported to automate the growth of social web, e.g. identification of social relation, opinion, community or key tags from social web content, extraction of semantically disambiguated geographic entities and persons in social web, and network analysis for online community and tag co-occurrence network.

Another theme focuses on how social web can help the AI community. Tim Finin, a prestige Semantic Web researcher and a professor of University of Maryland, Baltimore County, gave an invited talk "Wikipedia as an ontology". The talk shows that Wikitology, a hybrid knowledge base constructed from Wikipedia and other knowledge sources, can be used to address many conventional AI and IR problems, such ontology creation, named entity identification, automated document tagging, and query expansion. Several presentations also suggested social web based infrastructure, e.g. semantic wiki, to curate, evolve and manage semantic web data which is previously hard to build and grow.

Yet another theme focuses on applications of social semantic web. Nova Spivak, CEO of the flagship social semantic web company Radar Network, gave an invited talk on "Twine: Lessons Learned about the Social Semantic Web". The talk demonstrated Twine.com, a semantic social bookmarking and community website for collaboratively filtering web content. It reported interesting statistics about the

users of twine (e.g. high average income and >50% users contribute/create content), and it also reported lessons learned with challenges in scalability and distributed data computing infrastructure.

One more critical outstanding issue is privacy and trust. A number of presentations cover the legal aspect (e.g. privacy laws differ in different countries) and computational aspect (e.g. access control and policy) of this issue, and many attendants admit that "The Semantic Web IS the Privacy Problem", i.e., better semantics may make it easier to reversely derive information protected by privacy laws.

One more theme is on end user experience. Five panelists, from Oracle, Stanford, University of Karlsruhe, Twine, and Freebase, and a moderator from Vulcan, discussed the requirements and challenges to maintain a good end user experience for social (semantic) web applications. For example, how to best serve the end users without demanding too much learning burden when evolving the underline data organization from tags to RDF or more semantic-intensive structure? How to motivate and facilitate users to collaboratively access, create, evolve and improve semantic data? How to help connect social semantic web to our everyday applications (like spreadsheets)? Again, scalable storage system with low response time is required, and intuitive data access and editing user interface are critical.

Mark Greaves, Li Ding, Jie Bao and Uldis Bojars served as cochairs of this symposium. The papers of the symposium were published as AAAI Press Technical Report SS-09-08. Program and presentation slides of the symposium are available at <http://tw.rpi.edu/sss09>.