

Journal of Web Semantics

Special issue on

Exploring New Interaction Designs Made Possible by the Semantic Web

Overview:

In this Special Issue, we seek papers that look at the challenges and innovate possible solutions for everyday computer users to be able to produce, publish, integrate, represent and share, on demand, information from and to heterogeneous data sources. Challenges touch on interface designs to support end-user programming for discovery and manipulation of such sources, visualization and navigation approaches for capturing, gathering and displaying and annotating data from multiple sources, and user-oriented tools to support both data publication and data exchange. The common thread among accepted papers will be their focus on such user interaction designs/solutions oriented linked web of data challenges. Papers are expected to be motivated by a user focus and methods evaluated in terms of usability to support approaches pursued.

Motivation:

The current personal computing paradigm of single applications with their associated data silos may finally be on its last legs as increasing numbers move their computing off the desktop and onto the Web. In this transition, we have a significant opportunity – and requirement – to reconsider how we design interactions that take advantage of this highly linked data system. Context of when, where, what, and whom, for instance, is increasingly available from mobile networked devices and is regularly if not automatically published to social information collectors like Facebook, LinkedIn, and Twitter.

Intriguingly, little of the current rich sources of information are being harvested and integrated. The opportunities such information affords, however, as sources for compelling new applications would seem to be a goldmine of possibility. Imagine applications that, by looking at one's calendar on the net, and with awareness of whom one is with and where they are, can either confirm that a scheduled meeting is taking place, or log the current meeting as a new entry for reference later. Likewise, documents shared by these participants could automatically be retrieved and available in the background for rapid access. Furthermore, on the social side, mapping current location and shared interests between participants may also recommend a new nearby location for coffee or an art exhibition that may otherwise have been missed. Larger social applications may enable not only the movement of seasonal ills like colds or flus to be tracked, but more serious outbreaks to be isolated.

The above examples may be considered opportunities for more proactive personal information management applications that, by awareness of context information, can better automatically support a person's goals. In an increasingly data rich environment, the tasks may themselves change. We have seen how mashups have made everything from house hunting to understanding correlations between location and government funding more rapidly accessible. If, rather than being dependent upon interested programmers to create these interactive representations, we

simply had access to the semantic data from a variety of publishers, and the widgets to represent the data, then we could create our own on-demand mashups to explore heterogeneous data in any way we chose.

For each of these types of applications, interaction with information – be it personal, social or public – provides richer, faster, and potentially lighter-touch ways to build knowledge than our current interaction metaphors allow. What is the bottleneck to achieving these enriched forms of interaction? Fundamentally, we see the main bottleneck as a lack of tools for easy data capture, publication, representation and manipulation.

Example

The mashup is a summative demonstration of the problem: to combine only two resources like a map and an apartment listing, one requires an API for a map service, programming knowledge/skills to get the apartment data from one source, say by having to scrape web pages, and plug that into the other. If the person wishes to use a different map, they may need to rewrite how the data from the apartment listing is plugged into that visualization. If they wish to use a completely different visualization, such as a heat graph, they will need to develop that code themselves.

The barrier to entry for non-programmers is too high for most to be interested to attempt construction. By the time they would have the data they need, it may no longer even be relevant for the questions they wish to explore. Even for sufficiently skilled programmers, there are better things we could be doing with our time than constantly re-inventing the wheel.

Challenges to be addressed in this issue include, but are not restricted to:

- * approaches to support integrating data that is readily published, such as RSS feeds that are only lightly structured.
- * approaches to apply behaviors to these data sources.
- * approaches to make it as easy for someone to create and to publish structured data as it is to publish a blog.
- * approaches to support easy selection of items within resources for export into structured semantic forms like RDF.
- * facilities to support the pulling in of multiple sources; for instance, a person may wish to pull together data from three organizations. Where will they gather this data? What tools will be available to explore the various sources, align them where necessary and enable multiple visualizations to be explored?
- * methods to support fluidity and acceleration for each of the above: lowering the interaction cost for gathering data sources, exploring them and presenting them; designing lightweight and rapid techniques.
- * novel input mechanisms: most structured data capture requires the use of forms. The cost of form input can inhibit that data from being captured or shared. How can we reduce the barrier to data capture?
- * evaluation methods: how do we evaluate the degree to which these new approaches are effective, useful or empowering for knowledge builders?
- * user analysis and design methods: how do we understand context and goals at every stage

of the design process? What is different about designing for a highly personal, contextual, and linked environment?

This issue focusses on innovative interaction design that takes advantage of linked, semantic data on the Web. Therefore, particularly relevant work includes interaction designs to support rapid data selection or production, reuse, representation, and designs that help users understand and control their data environment. Real user evaluations that demonstrate that these attributes are experienced as facile and fluid are expected as part of work presented. We are also interested in evaluated models or frameworks that will support such interaction, either by dealing with the limitations of current data sources, or in particular, by making it easy for ordinary computer users to produce shared data formats for these data interaction tools. The preference is for RDF-based tools. Also of interest is what new applications may be produced when such effortless heterogeneous data merging becomes possible not ***just*** for Ajax hackers but **for anyone** currently using the Web.

We welcome three types of submission for this Special Issue:

Full papers from 10-30 pages of journal format.

Short papers (4-6 page) demonstration papers with evaluations of new tools that address any of the above challenges.

Short (1-2 page) forward-looking more speculative papers addressing the challenges outlined above.

Key Dates:

Papers due April 20

Reviews to Authors by May 15

Authors' Revisions by June 7

Additional comments by Reviewers to Authors by June 23

Final Revisions by July 15

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