

Semantic Web Query and Visualization Interface

The Data Science Initiative and the University Library are beginning a project to prototype a new type of browsing experience designed specifically to exploit new information retrieval and display functionalities made possible by the Semantic Web. The Semantic Web is an extension of the World Wide Web that was proposed to the World Wide Web Consortium (W3C) by Tim Berners-Lee in 2001. According to the W3C, "The Semantic Web provides a common framework that allows data to be shared and reused across application, enterprise, and community boundaries." In order to facilitate this goal, the W3C has defined a Resource Description Framework (RDF) for exposing graph data across the internet using machine traversable identifiers and structures that allow users to build extended graphs of information that span multiple repositories. In 2013, more than four million Web domains contained Semantic Web markup, and that number continues to grow. To date, however, there have been very few attempts to leverage semantic web enabled data. The goal of this project is to design and implement a user browsing experience that is specifically designed to capitalize on the growing web of available semantic data. Students who work on the project will design an information architecture, investigate and implement a suitable graph-based data store and indexing system, and design and implement a prototype user interface that allows users to interact with visualized network graphs (using D3.js) as a means of information retrieval. Students working on the project will work directly with the Associate Director of the DSI and DSI Graduate Student Researchers and affiliates.