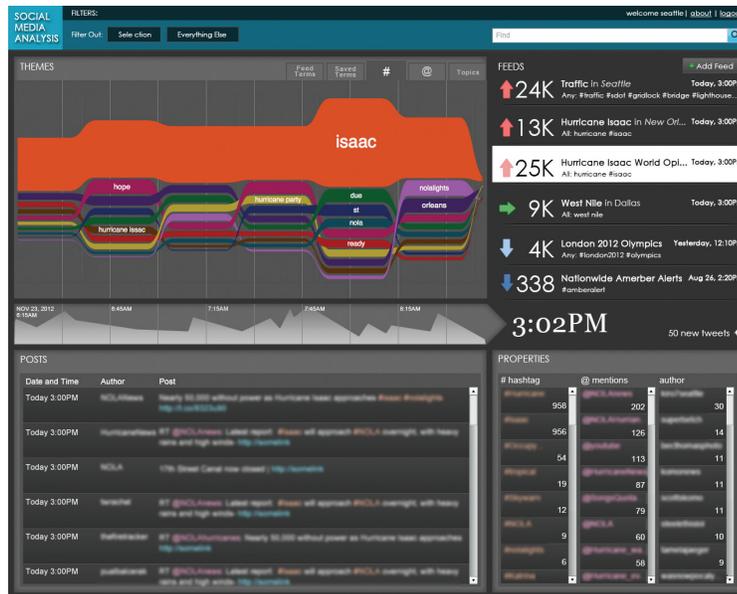


The Scalable Reasoning System's rich and powerful interface provides easy access to visual analytics tools and previously under-utilized information collections.

Scalable Reasoning System Lightweight Visualization for the Web

The Scalable Reasoning System (SRS) is a software framework that provides users with lightweight, engaging visual analytic capabilities—conveniently accessible through a web browser. SRS can be customized to support any data type including real-time sources like Twitter. SRS provides insights into information collections through rapid modeling, analysis capabilities and interactive visualizations that offer intuitive ways to explore information.



SRS based social media analysis provides live views of real-time streaming data to provide insight into emerging topics.

EASY, FLEXIBLE DATA ACCESS AND ANALYSIS

SRS supports rapid deployment of visualization applications to users who need access to a flexible set of analytical capabilities from a variety of locations. SRS can be accessed from a web browser or integrated into standalone applications or service-oriented architectures.

SRS can connect to a wide range of common web or database repositories or, with little effort, new plug-ins can be developed for more specialized or unexplored data sources. After connecting to the data source, the structured and unstructured information is analyzed in computational modules to uncover relationships, patterns, and trends in the data.

Custom SRS applications can be assembled by selecting from a library of analytic modules and visualization widgets, meaning that each application is designed to meet the needs of its end users. As a browser-based application framework, the SRS interface can be easily customized to match a customer's requirements. Whether the information to be analyzed is simply unstructured text or contains temporal, numeric, categorical, hierarchical or geospatial properties, SRS provides a high-level summarization of the information space and enables users to drill down to explore and discover more subtle patterns and relationships.

With SRS, information collections can now easily be brought in front of users in a form that is simple to learn and easy to use. Because SRS's user interface runs in a web browser, cumbersome user installations and configurations are not necessary. SRS can be used to develop a complete end-to-end visual analytics solution supporting data query and ingest, interactive visual analysis, and result dissemination. As an alternative, the analytic components of the framework can also be deployed individually and integrated into existing systems. A web service Application Programming Interface (API) allows SRS functionality to be used by other web-based tools.

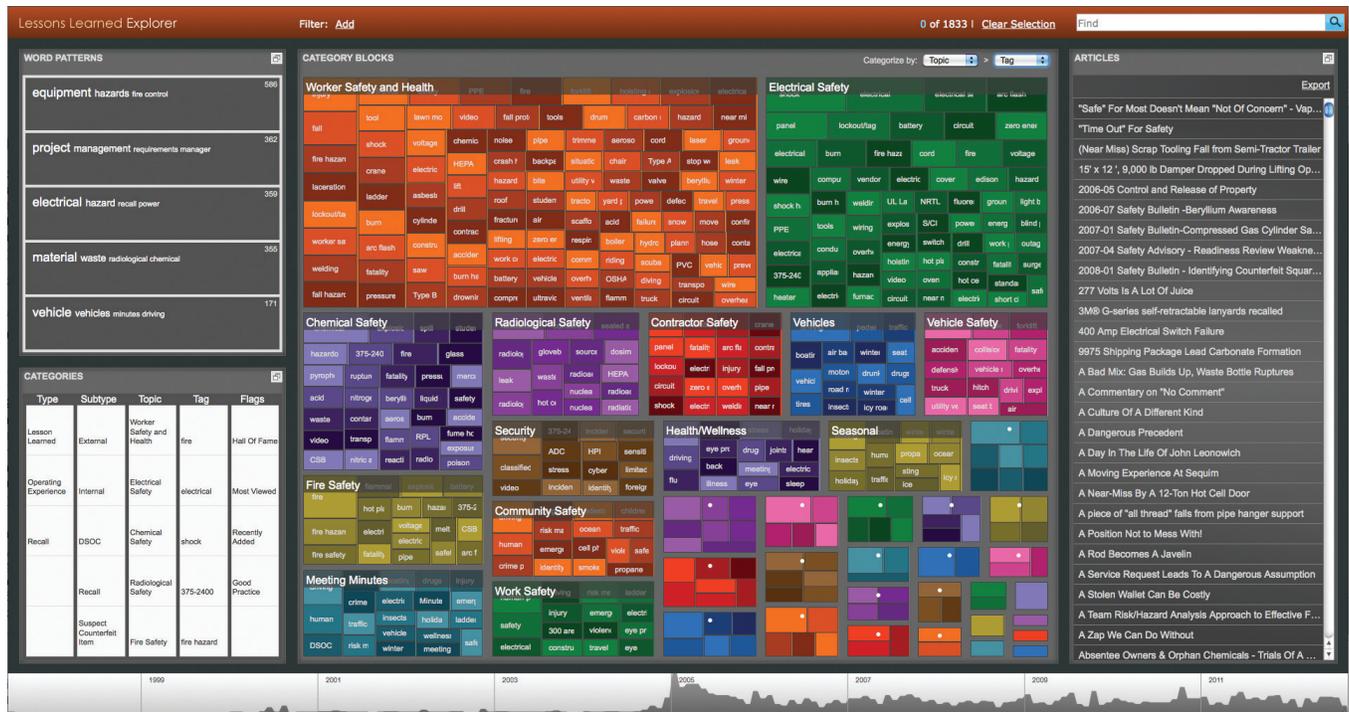
A CASE STUDY IN PUTTING SRS TO USE: THE LESSONS LEARNED EXPLORER

At the Pacific Northwest National Laboratory, lessons learned in critical areas such as safety, management, and security are captured in articles that are shared across the lab on an internal website that once had limited search capabilities. To improve service and value to website users, the Lessons Learned Operations team sought a faster, more accurate way to find articles based on topics, keywords, and subsets of interest.

To this end, the SRS team used its web-based analytics framework to create the Lessons Learned Explorer (LLEx). LLEx implements several SRS widgets that vastly improved the search ability and usability of the lab's lessons learned. For instance, the **word cluster widget** analyzes unstructured text, partitioning the document

collection into clusters using differentiating words detected within it. A **faceted browse widget** lets users explore different dimensions of structured, categorical data to find relevant articles based on known properties of the data. The **treemap widget** visually displays a subset of the categories used in the faceted browse widget, allowing users to quickly see the importance of certain articles among all categories. The **StoryFlow widget** identifies prominent themes in data and depicts their change over time.

The SRS LLEx application has enabled PNNL's Lessons Learned website users to quickly find articles of interest. Using simple, powerful interaction paradigms across SRS enables impromptu users to quickly find analytical value in large amounts of online data.



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ABOUT PNNL

Interdisciplinary teams at Pacific Northwest National Laboratory address many of America's most pressing issues in energy, the environment and national security through advances in basic and applied science. PNNL employs 4,600 staff, has an annual budget of nearly \$1 billion, and has been managed for the U.S. Department of Energy by Ohio-based Battelle since the laboratory's inception in 1965.

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