Research Profiling Based on Semantic Mining

This demo is a major outcome of SMESWR (Science Monitoring and Evaluation based on Scientific Web Resources) project whose goal is to depict research development and trend based on unstructured web resources. Based on this demo, people can form a panoramic perspective of a specific research area, track evolution of one research topic or a research community, observe related objects and gain interrelationship between research topics for a research area.

This demo contains three main task layers:
- Raw data crawling layer. Crawl related websites such as institutional website, news website and identify main content blocks.
- Semantic knowledge extraction layer. Extract needed knowledge components in pre-defined a research ontology referring to SWRC. Transfer the unstructured content to structured knowledge units with timestamp.
- Analysis and visualization layer. Based on the extracted units, use co-occurrence analysis, statistic analysis and semantic mining to perform burst detection, hot topic detection, timeline tracking and relation mining.

A application Scene of the demo

Semantic Knowledge Extraction

Implement and Evaluation

At present, we choose "Artificial Intelligence" research area as test domain. Based on the proposed profiling framework, we:
- Identify the most important research objects
- Visualize whole structure of one research topic
- Use curve figures to intuitively illustrate the historical development of specific knowledge object
- Predict the future development trends of a knowledge object
- Connect each knowledge object into relation networks in AI research area.
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More details could be found on the portal (see the url in the bottom).

Further Information: http://124.16.154.12/