Insightful Corporation

Inverse Inference Engine for High-Precision Web Search

Enhanced Search Engine Provides Better Intelligence Faster

Technology and Innovation

The technology developed by Insightful Corporation (Insightful) under DARPA’s SBIR program helps analysts work through documentation more quickly and efficiently than traditional technologies, such as keyword search or simple entity extraction software. The program comprises two distinct parts: 1) a new algorithm for latent semantic analysis, and 2) deep parsing technology for relationship extraction from unstructured information.

Latent semantic analysis is a promising technique with applications to enhanced keyword retrieval and cross-lingual retrieval. Insightful’s development of a new algorithm, labeled Latent Semantic Regression (LSR), is scalable to large data sets and forms the basis of the company’s InFact® product line. InFact® is a production quality, end-to-end deployable software system that performs relationship extraction, text mining, and search.

InFact® understands far more than keyword searches—it understands facts and actions. In a search for ‘blackhawk,’ a type of military helicopter, InFact® generates an aggregated list of all combat situations where the Blackhawk helicopter was deployed in the recent past, including all locations and military units that employ it, along with information about acquisition and maintenance costs and much more.

The company’s technology is being used by the U.S. Army Corps of Engineers, Air Force Research Labs, major pharmaceutical companies, and a major food manufacturer.

Joint Collaborations

The work Insightful has done on its LSR algorithm and InFact® product has spawned a number of SBIRs, including:

- U.S. Air Force
- National Institutes of Health
- U.S. Army Corps of Engineers
- Office of the Secretary of Defense/Army Research Institute

Additionally, Insightful is collaborating with several major systems integrators, including Science Applications International Corporation (SAIC), Mantech, and Booz Allen Hamilton.
Lessons Learned

- Do market research and validation to ensure that there is a viable commercial outlet for the company’s innovative technology, once all the technical hurdles have been overcome.
- Be able to deploy to a large community of end users and gather their feedback from the very beginning. Validation with the end user must drive all product development.
- Communicate changes in direction to the DARPA project manager promptly. Changes in direction often are motivated by lessons learned from end-user feedback. Changes can be straightforward to justify to the program manager, but still require advance notice.

Economic Impact

The funding received by Insightful under this DARPA SBIR has had a significant and positive impact on the company’s research efforts. Besides being Insightful’s initial key contract in this research area, the DARPA SBIR offset approximately 25 percent of the company’s development costs during the period 2000–2002. The InFact® product line has contributed to the company’s revenues—approximately $900,000 in 2004, and $1.5 million in 2005.

After the successful debut of InFact®, Insightful created a separate business unit for text analysis and search, and hired additional business development and sales personnel. The DARPA SBIR also led to three U.S. Patents: 6,510, 406; 6,757,646; and 6,862,710.

About the Company

Insightful Corporation—based in Seattle, Washington—has 120 employees and annual revenues of $22.3 million, representing a 18-percent increase over revenues for the previous year. Insightful also has offices in New York City, North Carolina, France, Switzerland, and the United Kingdom, with distributors around the world.

Insightful develops and delivers software and solutions for predictive analytics that have enabled thousands of companies to discern the patterns, trends, and relationships hidden in the data they collect. Insightful solutions are used by companies and organizations where analytics are critical to success, including financial services, pharmaceuticals, biotechnology, telecommunications, energy, and manufacturing, as well as research institutions and military and non-military government organizations.