

Jefferson Robert Heard

jeff@renci.org

Permanent Address:

Jeff Heard
3926 Swarthmore Rd
Durham NC 27707
919.321.6154

Business Address:

Renaissance Computing Institute
100 Europa Dr
Chapel Hill, NC

Areas of Interest

Declarative visualization programming. Functional programming. Large scale web/text/data mining and visualization. Scaling machine learning to large datasets, especially text. Scalable text-mining systems. Visualizations scalable to massive datasets.

Education

Illinois Institute of Technology (2004-present)
4 years towards Doctor of Philosophy in Computer Science (ongoing) GPA: 3.9.
Advisor: Ophir Frieder (ACM, AAAS, IEEE Fellow, Royden B. Davis Professor Georgetown University)

Employment (full time)

Senior Data Researcher, Renaissance Computing Institute. 2006-present.

Developed a visual analytics tool for all the web-traffic for the entirety of iBiblio, all 417 sites, that shows the effects of search-engine indexer hits and cross-site traffic affect overall site visits. The tool allows iBiblio web partners to understand whether their sites are getting indexed by the top 4 search engines and which other iBiblio sites they see the most cross-traffic from.

Conceived and developed the Docuverse, a 3D interactive visual text mining system for large collections and the World Wide Web. Developed interactive browsing system for large volumes of heirarchically clustered data, being used to build functional protein mappings of the Human Genome. Developed visualization of UNC grant activity worldwide. Currently developing geographic visualizations to support grant work with the UNC Department of Health

Senior Researcher/Systems Administrator, IIT Information Retrieval Lab. 2005-2006.

In addition to systems administrator, has been lead developer and project manager on several high-dollar contracts at one of the top labs in the field. In this role, led teams of 2-4 people on successful projects with Lockheed-Martin and Northrop-Grumman.

Chief Technical Officer (CTO), Intranet Mediator Inc. 2005-2006.

Designed, took on role of chief developer, and oversaw the development of the patented Intranet Mediator system. This system allows multilingual natural language question-answering capable of integrating structured (RBDMS), semi-structured (XML), and unstructured (Text/IR) data simultaneously. In this role, managed a team of up to 15 people.

Software Developer III, Acxiom Corporation. 2000-2005.

In addition to other projects, designed, developed, and maintained the build for the largest data product at Acxiom, creating a distributed Java/C++ ETL process that cut build-time from 30 days to 2.8 days.

Publications

- X. Guan, J. Heard. "A Novel Method for Large Tree Visualization," Journal of Bioinformatics, to appear. J. Heard, X. Guan.
- "Visualizing Large Binary Trees in Haskell," The International Conference on Functional Programming (ICFP). September 2008.
- J. Heard. "Tutorial: Beautiful Code, Compelling Evidence: Functional Programming for Information Visualization and Visual Analytics," Functional Programming Developer Tracks (DEFUN2008), September 2008.
- J. Heard, J. Wilberding, G. Frieder, O. Frieder, D. Grossman, L. Kane, "On Mediated Search of the United States Holocaust Memorial Museum Data," The 6th conference on Next Generation Information Technologies and Systems (NGITS). July 2006.
- D. Lewis, G. Agam, S. Argamon, O. Frieder, D. Grossman, J. Heard, "Building a Test Collection for Complex Document Information Processing," To appear, ACM-SIGIR'06. August 2006.
- J. Heard, J. Prokop, D. Grossman, O. Frieder, "Scalability Assessment of Complex Boolean Queries," MITRE Conference on Information Architecture. April 2005.
- J. Heard, O. Frieder, D. Grossman, "IIT at TREC 2004: Standard Retrieval Models Over Partitioned Indices for the Terabyte Track," NIST Text Retrieval Conference. November 2004.

Funding

- "Software Development Tools for Improved Ease-of-Use of Petascale Systems." (LAB 08-19) Senior Staff. \$521,596
- "Public Health Impact of Moving Toward a Sustainable Food System in North Carolina: Informing Policy" Gillings Institute. Other Staff. \$400,000