

Allison L. Powell

Corporation for National Research Initiatives
1895 Preston White Drive
Suite 100
Reston, VA 20191

allisonpowell@gmail.com
<http://language.cnri.reston.va.us/powell.html>
<http://www.cs.virginia.edu/~alp4g>

Degrees

Ph.D., Computer Science, January 2001, University of Virginia, Charlottesville, VA
Database Selection in Distributed Information Retrieval: A Study of Multi-Collection Information Retrieval

M.C.S., Computer Science, May 1995, University of Virginia, Charlottesville, VA
Project topic: Applying Information Retrieval Techniques to Software Documentation

B.S., Mathematics, May 1993, College of William and Mary, Williamsburg, VA

Research Interests

Evaluation of Language Processing Systems, Multi-collection Information Retrieval, Web-based Information Retrieval, Metasearching, Collection Selection, Digital Libraries

Research Experience

Research Scientist, Corporation for National Research Initiatives (July 2001–present)

- *TIDES Evaluation*. Developed evaluation measures and conducted pilot study evaluations of integrated language processing systems for the DARPA TIDES project.

Research Associate, University of Virginia, Department of Computer Science (Jan. 2001–June 2001)

- *IM Evaluation*. Studied collection selection in the PIE system.
- *Language Models*. Studied incomplete resource descriptions for collections and measures for determining their quality.
- *WWW Metasearching*. Studied the application of multi-collection information retrieval techniques to fine-grained metasearching.

Graduate Research Assistant, University of Virginia, Department of Computer Science (June 1994–Dec. 2000)

- *Collection Selection*. Studied the evaluation and comparison of collection selection techniques and the impact that collection selection can have on multi-collection information retrieval.
- *ADS Project*. Collaborated with astronomers at the Smithsonian Astrophysical Observatory and National Radio Astronomy Observatory to enable studies of trends in astronomical publication. Studied use of clustering for authority control of variant names for items in the Astrophysical Data System database.
- *MSS Project*. Developed a prototype and conducted experiments to improve the creation and retrieval of software documentation for the Magnetic Stereotaxis System.
- *LASR Project*. Assisted in a study of ways in which the general public, including students in grades K-12, could gain effective access to information from the Global Change Data and Information System (GCDIS).

Publications

Papers in Refereed Journals

- Allison L. Powell and James C. French. Comparing the Performance of Collection Selection Algorithms. *ACM Transactions on Information Systems*, 21(4):412-456, 2003.
- James C. French, Allison L. Powell, Fredric Gey and Natalia Perelman. Exploiting Manual Indexing to Improve Collection Selection and Retrieval Effectiveness. *Information Retrieval*, 5(4):323-351, 2002.
- James C. French and Allison L. Powell. Metrics for Evaluating Database Selection Techniques. *World Wide Web*, 3(3), 2000.
- James C. French, Allison L. Powell and Eric Schulman. Using Clustering Strategies for Creating Authority Files. *Journal of the American Society for Information Science*, 51(8):774-786, 2000.
- Eric Schulman, James C. French, Allison L. Powell, Guenther Eichhorn, Michael J. Kurtz and Stephen S. Murray. Trends in Astronomical Publication Between 1975 and 1996. *Publications of the Astronomical Society of the Pacific*, 109:1278-1284, 1997.
- James C. French, John C. Knight and Allison L. Powell. Applying Hypertext Structures to Software Documentation. *Information Processing & Management*, 33(2):219-231, 1997.

Papers at Refereed Conferences

- Gary A. Monroe, James C. French and Allison L. Powell. Obtaining Language Models of Web Collections Using Query-Based Sampling Techniques. *Hawaii International Conference on System Sciences (HICSS-35): Data Mining and Information Retrieval*, January 2002.
- James C. French, Allison L. Powell, Fredric Gey and Natalia Perelman. Exploiting A Controlled Vocabulary to Improve Collection Selection and Retrieval Effectiveness. *Tenth International Conference on Information and Knowledge Management (CIKM 2001)*, pages 199-206, November 2001.
- Allison L. Powell, James C. French, Jamie Callan, Margaret Connell and Charles L. Viles. The Impact of Database Selection on Distributed Searching. *23rd ACM SIGIR Conference on Information Retrieval (SIGIR'00)*, pages 232-239, July 2000.
- Allison L. Powell and James C. French. Growth and Server Availability of the NCSTRL Digital Library. *5th ACM International Conference on Digital Libraries (DL'00)*, pages 264-265, June 2000.
- James C. French, Allison L. Powell, Jamie Callan, Charles L. Viles, Travis Emmitt, Kevin J. Prey and Yun Mou. Comparing the Performance of Database Selection Algorithms. *22nd ACM SIGIR Conference on Information Retrieval (SIGIR'99)*, pages 238-245, August 1999.
- James C. French and Allison L. Powell. Metrics for Evaluating Database Selection Techniques. *Proceedings of the International Workshop on Internet Data Management (IDM'99) at the 10th International Conference and Workshop on Database and Expert Systems Applications (DEXA'99)*, pages 726-730, September 1999. A longer version of this paper appears in *World Wide Web*.
- Venkatesh Ganti, Raghu Ramakrishnan, Johannes Gehrke, Allison Powell and James French. Clustering Large Datasets in Arbitrary Metric Spaces. *15th International Conference on Data Engineering*, pages 502-511, 1999.
- James C. French, Allison L. Powell, Charles L. Viles, Travis Emmitt and Kevin J. Prey. Evaluating Database Selection Techniques: A Testbed and Experiment. *21st ACM SIGIR Conference on Information Retrieval (SIGIR '98)*, pages 121-129, August 1998.
- James C. French, Allison L. Powell and Walter R. Creighton, III. Efficient Searching in Distributed Digital Libraries. *3rd ACM International Conference on Digital Libraries (DL'98)*, pages 283-284, June 1998.
- James C. French, Allison L. Powell and Eric Schulman. Applications of Approximate Word Matching in Information Retrieval. *Proceedings of the Sixth International Conference on Information and Knowledge Management*, pages 9-15, November 1997.

James C. French, Allison L. Powell, Eric Schulman and John L. Pfaltz. Automating the Construction of Authority Files in Digital Libraries: A Case Study. *First European Conference on Research and Advanced Technology for Digital Libraries*, ed. by C. Peters and C. Thanos, Springer-Verlag Lecture Notes in Computer Science, Vol. 1324, pages 55-71, September 1997.

Allison L. Powell, James C. French and John C. Knight. A Systematic Approach to Creating and Maintaining Software Documentation. *Proceedings of the 1996 ACM Symposium on Applied Computing*, pages 201-208, February 1996.

Unrefereed Publications

Jamie Callan, Allison L. Powell, James C. French and Margaret Connell. The Effects of Query-Based Sampling on Automatic Database Selection Algorithms. Technical Report CMU-LTI-00-162, Language Technologies Institute, School of Computer Science, Carnegie Mellon University, 2000.

Eric Schulman, James C. French and Allison L. Powell. Evaluating Astronomical Institutional Productivity Using the Astrophysics Data System Database. Technical Report CS-2000-02, Department of Computer Science, University of Virginia, January 1999.

James C. French, Allison L. Powell, Jamie Callan. Effective and Efficient Automatic Database Selection. Technical Report CS-99-08, Department of Computer Science, University of Virginia, February 1999.

Allison L. Powell and James C. French. The Potential to Improve Retrieval Effectiveness with Multiple Viewpoints. Technical Report CS-98-15, Department of Computer Science, University of Virginia, May 1998.

Anand Natrajan, Allison L. Powell, and James C. French. Using N-grams to Process Hindi Queries with Transliteration Variations. Technical Report CS-97-17, Department of Computer Science, University of Virginia, July 1997.

Eric Schulman, James C. French, Allison L. Powell, Stephen S. Murray, Guenther Eichhorn and Michael J. Kurtz. The Sociology of Astronomical Publication Using ADS and ADAMS. *Astronomical Data Analysis Software and Systems VI*, eds. G. Hunt and H. Payne, A.S.P. Conference Series, Vol. 125, pages 361-364, 1997.

Eric Schulman, Allison L. Powell, James C. French, Guenther Eichhorn, Michael J. Kurtz and Stephen S. Murray. Using the ADS Database to Study Trends in Astronomical Publication. *Bulletin of the American Astronomical Society*, 28(4):1281, 1996.

James C. French, Glen L. Bull, Martha R. Tarrant and Allison L. Powell. Library Access, Search and Retrieval (LASR) Pilot (Final Report). Technical Report CS-96-07, Department of Computer Science, University of Virginia, March 27, 1996.

Posters and Other Presentations

Allison L. Powell and James C. French. Exploiting Multiple Viewpoints for Enhancing Retrieval. Poster presented at *3rd ACM International Conference on Digital Libraries (DL'98)*, June 1998.

Allison L. Powell and James C. French. Using Multiple Views of a Document Collection in Information Exploration. *Workshop on Innovation and Evaluation in Information Exploration Interfaces*. Held in conjunction with *CHI'98*. April 1998.

Allison L. Powell and James C. French. Using Topic Information to Improve Access to Scientific Document Collections. *Workshop on Information Reduction in Information Retrieval Summarization and Visualization*. Held in conjunction with *SIGIR'97*. July 1997.

Teaching and Consulting Experience

Graduate Teaching Assistant, Univ. of Virginia, Dept. of Computer Science (Jan. 1996–May 1996)
Head TA for CS340, an advanced software engineering course.

Consultant, OC Systems, Fairfax, VA (September 1994)
Advised on the selection, installation and use of Frame2html, a software package to convert FrameMaker documents to HTML format suitable for on-line viewing and searching.

Graduate Teaching Assistant, Univ. of Virginia, Dept. of Computer Science (Aug. 1993–May 1994)
Instructed two laboratory sections, graded assignments and held office hours for Computer Science 201, an intermediate-level programming and software engineering course.

Honors

ASIST/UMI Doctoral Dissertation Award, 2001

NASA GSRP Fellowship, July 1997-July 2000

Graduate Research Award, University of Virginia, Department of Computer Science. June 1998.

Luther T. Conner Prize in Mathematics, College of William and Mary, Department of Mathematics.

Presidential Scholar, College of William and Mary.

Professional Activities

Editor, TeamTIDES Newsletter (August 2003-present)

Tutorials Chair, Conference for Information and Knowledge Management (2003)

Co-chair Library Committee, University of Virginia, Department of Computer Science (June 1994 - May 1996, May-August 1998)

Co-chair, Computer Science Graduate Student Group Steering Committee (May 1996 - July 1997)

Member, University of Virginia, Department of Computer Science Graduate Student Mentoring Program (1994–1999)

Maintained the Lite server for approximately 60 sites in the Networked Computer Science Technical Reference Library (<http://www.ncstrl.org/>).

Maintained the UVA Computer Science Department's online technical report archive.

Memberships

Member, Association for Computing Machinery (ACM) (1994 - present)

Member, ACM Special Interest Group on Information Retrieval (1994 - present)

Member, American Society for Information Science (ASIS) (1997 - present)

Refereeing

Information Retrieval (2004), Information Processing and Management (2004), ACM Transactions on Information Systems (2002) IEEE Transactions on Parallel and Distributed Systems (2003)

Grace Murray Hopper Celebration of Women in Computing New Investigator Papers program (2004)

SIGIR 2000 poster program

External reviewer: 20th Annual International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR '97), Sixth International Conference on Information and Knowledge Management (CIKM '97), 21st Annual International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR '98), 3rd ACM International Conference on Digital Libraries (DL'98), 4th ACM International Conference on Digital Libraries (DL'99)

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