

Rebecca Cathey

323 Autumn Trail
Ringgold, GA 30736

312.636.4977
rebecca@ir.iit.edu

Education

Illinois Institute of Technology

PhD in Computer Science

- Advisor: Ophir Frieder
- Graduated: December 2007 (GPA: 4.0)

Master of Science in Computer Science

- Graduated: May 2004 (GPA: 3.93)

Southern Adventist University

Bachelor of Science in Mathematics and Computer Science

- Graduated: Summa Cum Laude (GPA: 3.90)

Chicago, IL
2002-2007

Collegedale, TN
1998-2002

Active Clearance

Top Secret Single Scope Background Investigation (TS/SSBI)

Work Experience

BAE Systems - Advanced Information Technologies

Senior Research Scientist

- Advanced Research in Network Security
- Researched and developed security protocols for mobile ad-hoc networks (Led data accessibility thrust area)
- Proposed and won funding for network information flow clustering research
- Led and participated as a team in various aspects of classified projects

Arlington, VA
October 2007 - Present

Information Retrieval Laboratory - IIT CS Department

Research Assistant

- Scalable XML Search in collaboration with BitSystems, Inc. (project manager since 2003)
- Advanced Information Retrieval Engine (AIRE) team participation for the Text REtrieval Conference (TREC)
- Customized AIRE for production use by Harris Corporation
- Yizkor book search in collaboration with the US Holocaust Memorial Museum (project manager since inception in March 2006)
- Led or co-led a variety of projects involving entity tagging, misuse detection, and parallel document clustering

Chicago, IL
August 2002 - Present

Software Technology Center

Web Developer

- Gathered requirements to meet specific customer needs

Collegedale, TN
January 2001 - July 2002

- Designed and developed custom web applications such as e-commerce sites using VeriSign/ECHOCart
- Architected and maintained supporting database infrastructure

Ringgold Telephone Company

Technical Support Engineer

Ringgold, GA
August 2000 - November 2000

- Facilitated development of troubleshooting manual for the call center
- Interfaced with customers to identify and resolve phone and internet related issues
- Dispatched technicians when on-site help was required

**NASA Goddard Space Flight Center
Real-Time Software Engineering Branch**

Summer Intern

Greenbelt, MD
Summer 2000

- Analyzed and evaluated speech and collaboration applications
- In-depth study of speech recognition technology
- Researched and identified usable components for a wearable computer unit
- Assembled and experimented with wearable voice-activated computer prototype
- Demonstrated use of prototype in production like environment

Other Activities

School of Computing, Southern Adventist University

Member of the School of Computing Advisory Council

Collegedale, TN
2003 - Present

- Discuss and recommend changes to the current curriculum
- Provide suggestions for extracurricular programs designed to expose students to a research/professional environment

United States Holocaust Memorial Museum

Volunteer

Washington, D.C.
2007 - Present

- Designed and created a database to store metadata about Yizkor Books
- Led database development
- Created database to facilitate researcher collaboration

Program Committee

- ACM Conference on Information and Knowledge Management (CIKM 2008)
- ACM Conference on Information and Knowledge Management (CIKM 2009)
- Conference on Next Generation Information Technologies (NGITS 2009)

Member

- Institute of Electronics and Electrical Engineers (IEEE)
- Association for Computing Machinery (ACM)
- Society of Women Engineers (SWE)

Publications

- R. Cathey, J. Soo, O. Frieder, M. Amir, G. Frieder, Worldwide Accessibility of Yizkor Books, *Conference on Next Generation Information Technologies and Systems (NGITS 2009)*, Haifa, Israel, June, 2009.
- D. Leong, T. Ho, R. Cathey, Optimal Content Delivery with Network Coding, *Conference on information Sciences and Systems (CISS 2009)*, Baltimore, MD, March, 2009.
- J. Soo, R. Cathey, O. Frieder, M. Amir, G. Frieder, Yizkor Books: A Voice for the Silent Past, *Conference on information and Knowledge Management (CIKM 2008)*, Napa Valley, CA, October, 2008.
- R. Cathey, E. Jensen, S. Beitzel, D. Grossman, O. Frieder, Using a Relational Database for Scalable XML Search, *Journal of Supercomputing*, Volume 44, Number 2, May, 2008.
- R. Cathey, E. Jensen, S. Beitzel, O. Frieder, D. Grossman, Exploiting Parallelism to Support Scalable Hierarchical Clustering, *Journal of the American Society for Information Science and Technology (JASIST)*, Volume 58, Number 8, pp. 1207-1221, 2007.
- R. Cathey, S. Beitzel, E. Jensen, A. Pilotto, D. Grossman, Relationally Mapping XML Queries for Scalable XML Search, *Proceedings of the IEEE Intelligence and Security Informatics (ISI)*, New Brunswick, NJ, May, 2007.
- R. Cathey, S. Beitzel, E. Jensen, A. Pilotto, D. Grossman, Measuring the Scalability of Relationally Mapped Semistructured Queries, *Proceedings of the 2004 IEEE International Conference on Information Technology - Coding and Computing (ITCC)*, Las Vegas, NV, April 2004.
- R. Cathey, L. Ma, N. Goharian, D. Grossman, Misuse Detection for Information Retrieval Systems, *ACM 12th Conference on Information and Knowledge Management (CIKM)*, Washington, D.C., November 2003.
- S. Beitzel, E. Jensen, R. Cathey, L. Ma, D. Grossman, O. Frieder, A. Chowdhury, G. Pass, H. Vandermolen, IIT at TREC-2003: Task Classification and Document Structure for Known-Item Search, *Proceedings of the 12th Annual Text Retrieval Conference (TREC-2003)*, NIST, November 2003.

Skills

Research Interests: Information retrieval, XML retrieval, data mining, document clustering, scalable search, artificial intelligence, machine learning, computational linguistics

Languages: Java, Perl, PHP, Shell, L^AT_EX, SQL

Web and Related Technologies: HTML, JavaScript, AJAX, CSS

XML Related Technologies: XML, XHTML, SOAP, XSLT, XPath, XQuery, XML-QL

Operating Systems: Linux (Debian and RedHat), Solaris, MacOS X, Windows 95/98/NT/2000/XP

Applications: MySQL, Oracle, Gnuplot, Vim, OpenOffice, MS Office

Miscellaneous: Strong verbal and written communication skills, excellent troubleshooting and debugging skills, exceptional problem solving skills, self-motivated with clearly demonstrated teamwork abilities