JENNIFER L. BECKMANN
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RESEARCH INTERESTS

The overall goal of my research is to enable data management systems to provide seamless, efficient, and effortless manageability to next generation applications. Specific interests in: data storage, query processing, physical database design, self-tuning/autonomic management, integration of heterogeneous data sources, personal information management, and novel use of database systems in new applications.

EDUCATION

Ph.D. Candidate in Computer Science, expected August 2006
University of Wisconsin, Madison, WI
Dissertation topic: Relational Database Management System Support for Sparse Data Sets
Advisor: Jeffrey F. Naughton

M.S. in Computer Science, May 2002
University of Wisconsin, Madison, WI

B.S. in Computer Science, March 2000, cum laude
B.A. in Mathematics, March 2000
Western Washington University, Bellingham, WA

EXPERIENCE

University of Wisconsin, Madison, WI. Research Fellow advised by Jeffrey F. Naughton.
Dissertation solves handling sparse datasets in a relational database setting.
Developed and evaluated compact storage representation for sparse data that results in large (22 times for our experiments) speedups over traditional storage representations.
Extended PostgreSQL to demonstrate the usefulness of new storage technique.
Implemented, tuned, and measured performance of query workloads in SQL Server and IBM DB2.

IBM Research Almaden, San Jose, CA. Research Intern for Shivakumar Vaithyanathan. (Summer 2004)
Investigated pure-relational, object-relational, and XML storage representations for relational storage of unstructured annotations over text derived from text analytics, Unstructured Information Management Architecture (UIMA).

Microsoft Research, Redmond, WA. Research Intern for Venkatesh Ganti. (Summer 2002)
Evaluated the performance of the sketches algorithm for finding approximate functional dependencies in relational data.

AT&T Labs - Research, Florham Park, NJ. Research Intern for Nils Klarlund. (Summer 2000)
Integrated speech recognition and multimedia in XML languages like SMIL.
Integrated XML technologies, XPATH and XSLT, into a language constructs and formal semantics for a target language for XML interactive media languages.
Designed a runtime environment with generic event system and event flow architecture.

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PUBLICATIONS
REFEREED CONFERENCES

Jennifer L. Beckmann, Alan Halverson, Rajasekar Krishnamurthy, and Jeffrey F. Naughton. Extending RDBMSs To Support Sparse Datasets Using An Interpreted Attribute Storage Format. To appear in Proceedings of the 22nd International Conference on Data Engineering, (ICDE), Atlanta, Georgia, April 2006.

Jennifer L. Beckham, Giuseppe Di Fabbrizio, Nils Klarlund. Towards SMIL as a Foundation for Multimodal, Multimedia Applications. Eurospeech 2001, 1363-1367, Aalborg, September 2001.

DRAFTS SUBMITTED

Jennifer L. Beckmann, Eric Chu, and Jeffrey F. Naughton. RDBMS Index Support for Sparse Data Sets. 2006.

Alan Halverson, **Jennifer L. Beckmann**, and Jeffrey F. Naughton. A Comparison of C-Store and Row-Store in a Common Framework. 2006.

UNREFEREED TECHNICAL REPORTS

Jennifer L. Beckmann. The CNET E-Commerce Data Set. June, 2006.

LEADERSHIP & COMMITTEE SERVICE

Demonstrations Program Committee, SIGMOD 2005 Intl Conference on Management of Data.
Coordinator for Distinguished Women Computer Scientists and Mentors Lecture Series, Fall 2004.
Vice President for the Student Association for Computing Machinery (SACM) at U. of Wisconsin.
Social Chair for the U. of Wisconsin ACM's Committee on Women in Computing.
Co-chair for New Student Orientation, U. of Wisconsin Computer Sciences.
Graduate Admissions Committee for U. of Wisconsin Computer Sciences Department.
Session co-leader for Expanding Your Horizons conferences.

HONORS & AWARDS

Women in Science and Engineering Leadership Institute (WISELI) lecture series grant 2004.
National Science Foundation (NSF) Fellowship Award 2000.
AT&T Labs Fellowship Program (ALFP) Fellowship Award 2000.
Western Washington University (WWU) Class of 2000 Presidential Scholar.
WWU Class of 2000 Outstanding Graduate in Computer Science.
Washington State Scholar 1995.

REFERENCES

Professor Jeffrey F. Naughton, naughton@cs.wisc.edu, phone: 1-608-262-8737
University of Wisconsin-Madison, 1210 W. Dayton St. Madison, WI 53706

Professor David J. DeWitt, dewitt@cs.wisc.edu, phone: 1-608-263-5489
University of Wisconsin-Madison, 1210 W. Dayton St. Madison, WI 53706

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