

LEONARD LEANDER BROWN

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EDUCATION

- Ph.D. in Computer Science, Summer 2003
The University of Oklahoma, Norman
- M.S. in Computer Science, Spring 1997
The University of Oklahoma, Norman
- B.S. in Computer Science, with Special Distinction, Spring 1993
The University of Oklahoma, Norman

RESEARCH INTERESTS

- Database Management Systems
- Multimedia Systems
- Content-Based Image Retrieval
- Information Retrieval

EXPERIENCE

RESEARCH

- NASA's Jet Propulsion Laboratory (JPL), NASA Faculty Fellow, May 2004 – August 2004
Designed an information system architecture for the Systems Management Office (SMO) Organization within JPL. Researched techniques for combining information from several existing databases and file systems. Implemented prototype demonstrating design of proposed information system for the SMO.
- The University of Oklahoma, Research Assistant, January 2003 – February 2003
Developed a web-enabled database application for the management of terrorism data collected from various sources funded by the Oklahoma City Memorial Institute for the Prevention of Terrorism (MIPT). Researched and developed new techniques for performing text and image retrieval of terrorism data.
- The University of Oklahoma, Research Assistant, July 2000 – December 2000
Researched the techniques used currently at NASA for performing content-based image retrieval. Developed a proposal for using editing operations to perform content-based image retrieval in selected NASA applications. Guided the research for a student participating in the NSF Research Experience for Undergraduates program.
- The University of Oklahoma, Research Assistant, August 1999 – December 1999
Developed a relational database management system for the Regional AIDS Interfaith Network of Oklahoma (RAIN-Oklahoma). Worked with users to specify system requirements. Designed and implemented the system. Developed a user's manual for the system. Provided training for the users.

TEACHING

- The University of Texas at Tyler, Assistant Professor, December 2003 - present
 - COSC 5376 – Fundamentals of Data Warehouses
 - COSC 5375 – Advanced Database Design (Graduate-Level)
 - COSC 5360 – Database Design (Graduate-Level, Core-course)
 - COSC 4385 – Database Management Concepts
 - COSC 4360 – Net-Centric Computing
 - COSC 4345 – Computer Graphics
 - COSC 4315 – Information and Knowledge Management
 - COSC 4309 – Modern Information Systems
 - COSC 3365 – Programming with Data, File, and Object Structures
 - COSC 3315 – Social and Professional Issues in Computing
 - COSC 1337 – Object-Oriented Paradigm
 - COSC 1336/1136 – Programming Fundamentals/Programming Fundamentals Laboratory
- The University of Oklahoma, Teaching Assistant, Summer 2003, Summer 2001
 - CS1323 – Introduction to Computer Programming, Java
 - Course Instructor. Lectured 6 hours per week. Developed course materials for entire class, which included exams, quizzes, and homework assignments. Directed another graduate teaching assistant in summer 2001. Held office hours for 6 hours per week.
- The University of Oklahoma, Teaching Assistant, Fall 2002, Spring 2002, Fall 2001
 - CS2334 – Programming Structures and Abstractions, Java
 - Lab instructor for three weekly lab sections. Prepared lab lectures. Graded program designs written in Unified Modeling Language (UML). Graded programming assignments and group exercises. Held office hours for 3 hours per week.
- The University of Oklahoma, Teaching Assistant, Summer 2002, Spring 2001
 - CS1323 – Introduction to Computer Programming, Java
 - Lab Instructor for weekly lab sections. Graded the students' written homework assignments and programs. Held office hours for 3 hours per week.
- The University of Oklahoma, Teaching Assistant, Spring 1996
 - CS1314 – Fundamentals of Computer Programming, FORTRAN-90 and C
 - Lab Instructor for two weekly lab sections. Developed and graded programming assignments and quizzes. Graded exams. Held office hours for 3 hours per week.

INDUSTRY

- Lucent Technologies, Intern, Summers of 1999, 1998, 1997, and 1996
 - Developed, and implemented web-based application software for the Quality and Human Resources organizations. Worked with users to specify system requirements. Implemented application software using Perl and JavaScript languages.
- AT&T, Member of Technical Staff-1, May 1993 – January 1996
 - Developed application software and provided computer systems support for the Safety, Security, and Personnel organizations. Served as group leader for the Human Resources support group. Implemented application software using an Oracle database with interfaces in MS Access.
- Phillips Petroleum Company, Intern, June 1991 – August 1991
 - Developed a set of applications and subroutines for the research and development center.

PUBLICATIONS

- Leonard Brown and Le Gruenwald, “*Using Editing Operations to Improve Searching by Color in Multimedia Database Systems*”, International Journal of Imaging Systems and Technology (IJIST), Volume 18, Issue 2-3, 2008, pp. 182-194.
- Arun Kulkarni and Leonard Brown, “*Association-Based Image Retrieval*”, in Semantic Mining Technologies for Multimedia Databases (Edited by D. Tao, D. Xu, and X. Li), IGI Global, to appear.
- Leonard Brown, Sean Dodd et al., “*The Virtual Emergency Crash Cart: An Immersive Virtual Reality Learning Experience for Nurses*”, Emerging Technologies in Nurse Education, Seattle, Washington, July 2008, p. 107.
- Leonard Brown and Le Gruenwald, “*Speeding up Color-Based Retrieval in Multimedia Database Management Systems that Store Images as Sequences of Editing Operations*”, Proceedings of the First IEEE International Workshop on Multimedia Databases and Data Management (MDDM), Atlanta, Georgia, April 2006, CD-ROM.
- Fredericka Brown and Leonard Brown, “*Improving the Clinical Applicability of a Non-Invasive Perfusion Determination Technique*”, Proceedings of the International Conference on Data Management for Real-Life Problems in Biomedicine (DMRB), San Diego, California, June 2005, pp. 106-110.
- Padmaja Dukkupati and Leonard Brown, “*Improving the Recognition of Geometrical Shapes in Road Signs by Augmenting the Database*”, Proceedings of the 3rd International Conference on Computer Science and its Applications (ICCSA), San Diego, California, June 2005, pp. 8-13.
- Leonard Brown, “*Issues in Augmenting Image Databases to Improve Processing Content-Based Similarity Searches*”, Proceedings of the 20th Annual ACM Symposium on Applied Computing (SAC), Santa Fe, New Mexico, March 2005, pp. 1254-1255.
- Leonard Brown and Le Gruenwald, “*Performing Color-Based Similarity Searches in Multimedia Database Management Systems Augmented with Derived Images*”, Proceedings of the 21st British National Conference on Databases (BNCOD), Edinburgh, Scotland, Lecture Notes in Computer Science 3112 – Key Technologies for Data Management, July 2004, pp. 178-189.
- Leonard Brown, “*Searching Images by Color in Multimedia Database Systems*”, Doctoral Dissertation, School of Computer Science, The University of Oklahoma, Norman, OK, 2003.
- Leonard Brown and Le Gruenwald, “*A Prototype Content-Based Retrieval System that Uses Virtual Images to Save Space*”, Proceedings of the 27th International Conference on Very Large Databases (VLDB), Rome, Italy, September 2001, pp. 693-694.
- Leonard Brown, Le Gruenwald, and Greg Speegle, “*Issues in Using Specifications to Improve Content-Based Search of Multimedia Data*”, Proceedings of the 1999 International Symposium on Database Applications in Non-Traditional Environments (DANTE), Kyoto, Japan, November 1999, pp. 195-202.
- Leonard Brown, Le Gruenwald, and Greg Speegle, “*Issues in Using Knowledge to Perform Similarity Searching in Multimedia Databases Without Redundant Data Objects*”, Proceedings of 1st International Workshop on Multimedia Intelligent Storage and Retrieval Management (MISRM), Orlando, Florida, October 1999.
- Le Gruenwald, Leonard Brown, et al., “*Database Research at The University of Oklahoma*”, ACM SIGMOD Record, Volume 28, Number 3, September 1999.
- Leonard Brown and Le Gruenwald, “*Tree-Based Indexes for Image Data*”, Journal of Visual Communication and Image Representation (JVCIR), Volume 9, Number 4, December 1998, pp. 300-313.
- Leonard Brown and Le Gruenwald, “*Determining a Minimal and Independent Set of Image Processing Operations for a Multimedia Database System*”, Proceedings of the 1998 Energy Technology Conference and Exhibition (ETCE), Houston, Texas, February 1998, CD-ROM.

- Leonard Brown, Le Gruenwald, and Greg Speegle, “*Testing a Set of Image Processing Operations for Completeness*”, Proceedings of the 2nd International Conference on Multimedia Information Systems (ICMIS), Chicago, Illinois, April 1997, pp. 127-134.

GRANTS

- Leonard Brown, “*A Database Management System to Automate the Creation of PACE Reports*”, Center for Research, Evaluation and Advancement of Teacher Education (CREATE), University of Houston, 2008, \$18,693.
- Carol Kilmon, Sumit Ghosh, Artur Mikitiuk, and Leonard Brown, “*A Computer-Assisted Immersive Training Environment for Nurses to Use Emergency Crash Carts*”, Faculty Research Grant, University of Texas at Tyler, 2006-2007, \$14,500.
- Arun Kulkarni, Leonard Brown, and Sumit Ghosh, “*Computer Vision Laboratory for Interdisciplinary Research in Computer Science, Medicine, and Geosciences*”, Research Instrumentation Grant, University of Texas at Tyler, 2005, \$81,525.
- Leonard Brown, “*Improving the Accuracy of Content-Based Image Retrieval Systems by Augmenting the Underlying Databases*”, Faculty Research Grant, University of Texas at Tyler, 2004-2005, \$6,936.
- Leonard Brown, “*Improving the Accuracy of Retrieving by Color in Multimedia Database Management Systems through Augmentation*”, President’s Faculty-Student Summer Research Program, University of Texas at Tyler, 2004, \$6,000.

PRESENTATIONS

- Panelist for Panel Discussion entitled “*Integrating Networking and Databases*”, International Advanced Database Conference, San Diego, California, June 2005.
- “*Augmenting Image Databases to Improve Content-Based Retrieval*”, University of Texas Health Center at Tyler Symposium and Retreat, Tyler, Texas, December 2004.

STUDENT SUPERVISION

- English, Jeremy, M.S. (Non-thesis) Advisor, “*VisiGroup Image Search: Refining Text-Based Image Searches with Visual Clustering*”, May 2008.
- Cherukuri, Anil, M.S. (Non-thesis) Advisor, “*Improving Traffic Sign Image Detection by Augmenting the Database*”, May 2007.
- Amboji, Peter, M.S. (Non-thesis) Advisor, “*Performance Evaluation of Retrieval of Road Sign Images Using Color to Augment the Database*”, December, 2005.
- Chittineni, Pranita, M.S. (Non-thesis) Advisor, “*Performance Evaluation of Content Based Image Retrieval of Medical Images using Texture on Augmentation*”, December, 2004.
- Dukkupati, Padmaja, M.S. (Non-thesis) Advisor, “*Improving the Recognition of Geometrical Shapes in Road Signs by Augmenting the Database*”, December, 2004.

HONORS AND AWARDS

- NASA Faculty Fellowship Recipient, Jet Propulsion Laboratory, 2004
- Outstanding Graduate Teaching Assistant Award Recipient, May 2003.
- Upsilon-Pi-Epsilon National Computer Science Honor Society Member
- GAANN (Graduate Assistance in Areas of National Need) Fellowship Recipient, U. S. Department of Education
- Finalist, The University of Oklahoma Graduate Research Poster Contest

SERVICE

EXTERNAL

- Session Chair, First IEEE International Workshop on Multimedia Databases and Data Management (IEEE-MDDM), Atlanta, Georgia, April 2006.
- Program Committee Member, 20th Annual ACM Symposium on Applied Computing (SAC), March 2005
- Problem Set Writer, Texas Computer Education Association (TCEA) State High School Programming Contest, 2005-2009
- Problem Set Writer, Texas Computer Education Association (TCEA) Area High School Programming Contest, 2005-2009
- Head Judge, Texas Computer Education Association (TCEA) State High School Programming Contest, 2004-2008
- Programming Judge, East Texas State Fair, 2005

INTERNAL

- Institutional Review Board Member, The University of Texas at Tyler, 2006-2009
- Faculty Senate, Senator, College of Engineering and Computer Science, The University of Texas at Tyler, 2006-2009
- Strategic Planning Committee Member, College of Engineering and Computer Science, The University of Texas at Tyler, 2007
- Departmental Strategic Planning Committee Member, Computer Science Department, The University of Texas at Tyler, 2006-2007
- Graduation Rate Task Force Committee Member, The University of Texas at Tyler, 2006
- Faculty Senate Alpha-Omega Committee Member, The University of Texas at Tyler, 2006
- Dean Search Committee Member, The University of Texas at Tyler, College of Engineering and Computer Science, 2006
- Chair Search Committee, The University of Texas at Tyler, Computer Science Department, 2005
- Faculty Search Committee, The University of Texas at Tyler, Computer Science Department, 2005
- Judge, The University of Texas at Tyler's 11th Annual ACM High School Programming Contest, 2004-2007
- Teaching Test Graduate Representative, The University of Oklahoma, 2002-2003
- Webmaster, The University of Oklahoma Database Research Group, 2002-2003
- Panelist for Panel Discussion entitled "*Graduate School*", The University of Oklahoma's Human-Technology Interaction Center Research Experience for Undergraduates Third Annual Alumni Convention, Norman, Oklahoma, July 2001.
- Student Congress Senator, The University of Oklahoma Graduate Student Senator, 1997-1998
- Program Development Chair, AT&T's Alliance of Black Telecommunications Employees, 1995

PROFESSIONAL ORGANIZATIONS

- ACM (Association for Computing Machinery)
- IEEE (Institute of Electrical and Electronics Engineers, Inc.)
- ISE (Institute of Software Engineers)

REFERENCES WILL BE FURNISHED UPON REQUEST