

# Whitney J. Townsend

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## Education

- Ph.D. Student, August 2002 to Present  
Supervised by Professor Jacob A. Abraham  
Electrical and Computer Engineering  
Computer Engineering Research Center  
The University of Texas at Austin
- Master of Science in Computer Engineering, August 2002  
Mississippi State University  
Thesis - Discrete Function Representations Utilizing Decision  
Diagrams and Spectral Techniques
- Bachelor of Science (Magna cum Laude) in Computer Systems Engineering  
Minor in Mathematics, May 2000  
The University of Arkansas at Fayetteville
- Kansas State University  
Studied Biochemistry and Computer Science

## Employment

- Graduate Research Assistant, 2002 to Present  
(under SRC grant)  
Department of Electrical and Computer Engineering  
The University of Texas at Austin
- Lecturer, ECE 3732, Spring 2002  
Software Tools for Electrical Engineers (jointly taught)  
Department of Electrical and Computer Engineering  
Mississippi State University
- Graduate Research Assistant, 2000 to 2002  
(under NSF grant #CCR-0000891)  
Department of Electrical and Computer Engineering  
Mississippi State University
- Undergraduate Research Assistant (NSF-REU), 1999  
(under NSF grant #CCR-9633085)  
Department of Computer Systems Engineering  
University of Arkansas at Fayetteville
- Billing Clerk, 1986-1996  
Accounting Department, Tyson Foods, Inc.  
Fayetteville Freezer, Fayetteville, AR (1990-1996)  
Tyson Distribution Center, Rogers, AR (1986-1990)

## **Honors and Awards**

- Engineering Doctoral Fellowship, The University of Texas at Austin, 2003 – 2006
- National Science Foundation Graduate Research Fellow, 2002-2005
- Selected 2002 Graduate Research Assistant of the Year at the Master's Level for Mississippi State University, April 25, 2002
- Chosen 2002 Department of Electrical and Computer Engineering Graduate Research Assistant of the Year, Mississippi State University, March 2002
- Barrier Fellowship, Mississippi State University, 2001-2002 and 2000-2001
- Alliance for Graduate Education in Mississippi (AGEM) Scholarship, Fall 2001
- One of only twenty-eight graduate students selected to attend the Association for Computing Machinery (ACM) Design Automation Summer School, May 2001, Cape Cod, MA
- Chancellor's List, University of Arkansas  
Spring 1998
- Dean's List, University of Arkansas  
Fall 1997, Spring 1998, Spring 2000
- National Merit Scholarship
- Hughes Biochemistry Scholarship

## **Honorary Societies**

- Tau Beta Pi, Engineering Honor Society
- Eta Kappa Nu, Electrical and Computer Engineering Honor Society
- Alpha Theta Chi, Collegiate Honor Society
- Eta Sigma Phi, Classics Honor Society
- Gold Key, Collegiate Honor Society

## **Professional Memberships**

- Institute of Electrical and Electronics Engineers (IEEE)  
Computer Society  
Circuits and Systems Society
- Association for Computing Machinery (ACM)  
SIGDA
- Society for Industrial and Applied Mathematics (SIAM)

## Publications

- Whitney J. Townsend and Jacob A. Abraham, "Quadruple Time Redundancy: Efficient Error Correction for Datapaths," *Special Workshop in Honor of Prof. Edward J. McCluskey* in conjunction with the *22nd IEEE International Conference on Computer Design*, pp. 19-20, San Jose, CA, October 10, 2004.
- Whitney J. Townsend and Jacob A. Abraham, "Complex Gate Implementations for Quantum Dot Cellular Automata," *4th IEEE Conference on Nanotechnology*, pp. 625-627, Munich, Germany, August 17-19, 2004.
- Ramyanshu Datta, Antony Sebastine, Ravi Gupta, Whitney J. Townsend, and Jacob A. Abraham, "Test and Debug in Deep-Submicron Technologies," *5th IBM Austin Center for Advanced Studies Conference*, Austin, TX, February 19-20, 2004.
- Vivekananda M. Vedula, Whitney J. Townsend, and Jacob A. Abraham, "Program Slicing for ATPG-Based Property Checking," *17th International Conference on VLSI Design*, pp. 591-596, Mumbai, India, January 5-9, 2004.
- Whitney J. Townsend, Jacob A. Abraham, and Earl E. Swartzlander, Jr., "Quadruple Time Redundancy Adders," *18th IEEE International Symposium on Defect and Fault Tolerance in VLSI Systems*, pp. 250-256, Cambridge, MA, November 3-5, 2003.
- Whitney J. Townsend, Earl E. Swartzlander, Jr., and Jacob A. Abraham, "A Comparison of Dadda and Wallace Multiplier Delays," *SPIE Advanced Signal Processing Algorithms, Architectures, and Implementations XIII*, pp.552-560, San Diego, CA, August 6-8, 2003.
- Whitney J. Townsend, Jacob A. Abraham, and Parag K. Lala, "On-Line Error Detecting Constant Delay Adder," *9th IEEE International On-Line Testing Symposium*, pp. 17-22, Kos Island, Greece, July 7-9, 2003.
- Whitney J. Townsend, Mitchell A. Thornton and Parag K. Lala, "On-Line Error Detection in a Carry-Free Adder," in *11th IEEE/ACM International Workshop On Logic & Synthesis*, pp. 251-254, New Orleans, LA, June 4-7, 2002.
- Mitchell A. Thornton, D. Michael Miller, and Whitney J. Townsend, "Chrestenson Spectrum Computation Using Cayley Color Graphs," in *32nd IEEE International Symposium for Multiple-Valued Logic*, pp. 123-128, Boston, MA, May 15-18, 2002.
- Whitney J. Townsend, Mitchell A. Thornton, Rolf Drechsler, and D. Michael Miller, "Computing Walsh, Arithmetic, and Reed-Muller Spectral Decision Diagrams Using Graph Transformations," in *12th ACM/IEEE Great Lakes Symposium on VLSI*, pp. 178-183, New York City, NY, April 18-20, 2002.
- Whitney J. Townsend and Mitchell A. Thornton, "Partial Binary Decision Diagrams," in *34th Southeastern Symposium on System Theory*, pp. 422-425, Huntsville, AL, March 18-19, 2002.
- Whitney J. Townsend and Mitchell A. Thornton, "Walsh Spectrum Computations Using Cayley Graphs," in *44th IEEE Midwest Symposium on Circuits and Systems*, vol. 1, pp. 110-113, Dayton, OH, August 14-17, 2001.