Jennifer B Sartor

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ELIS - Ghent University
Sint-Pietersnieuwstraat 41
B-9000 Gent, Belgium

Research Managed runtime environments, memory management, garbage collection, dynamic optimization

Education

Ghent University — *Gent, Belgium*
Post-doc in Computer Science — *started October 2011*
Advisor: Lieven Eeckhout

Ecole Polytechnique Federale de Lausanne — *Lausanne, Switzerland*
Post-doc in Computer Science — *October 2010 - October 2011*
Advisor: Babak Falsafi

THE UNIVERSITY OF TEXAS AT AUSTIN — *Austin, TX*
Ph.D. in Computer Science — *completed Aug 2010*
Advisors: Kathryn McKinley, Steve Blackburn

M.S. in Computer Science — *completed December 2004*
Computer Science Education study — *August 2002 - December 2003*

THE UNIVERSITY OF ARIZONA — *Tucson, AZ*
B.S. in honors Computer Science and Mathematics, minor in Spanish — *completed December 2001*

Publications

X. Yang, S.M Blackburn, D. Frampton, J.B. Sartor, and K.S. McKinley. **Why Nothing Matters: The Impact of Zeroing** *ACM SIGPLAN 2011 Conference on Object Oriented Programming, Systems, Languages and Applications*, Portland, Oregon, October 2011.

J.B. Sartor, S.M. Blackburn, D. Frampton, M. Hirzel, and K.S. McKinley. **Z-Rays: Divide Arrays and Conquer Speed and Flexibility** *ACM SIGPLAN Conference on Programming Language Design and Implementation*, pp. 471–482, Toronto, Canada, June 2010.

J.B. Sartor, M. Hirzel, and K.S. McKinley. **No Bit Left Behind: The Limits of Heap Data Compression.** In *The 2008 International Symposium on Memory Management*, pp. 111–120, Tucson, AZ, June 2008. Received conference's **Best Presentation Award**.

J.B. Sartor, S. Venkiteswaran, K.S. McKinley, and Z. Wang. **Cooperative Caching with Keep-Me and Evict-Me.** In *Ninth Annual Workshop on Interaction between Compilers and Computer Architectures*, pp. 46–57, San Francisco, CA, February 2005.

Honors

Invited to serve on the Program Committee of the ACM International Symposium on Memory Management 2011. *March 2011*

First place in poster and presentation rounds in the graduate student category of ACM Student Research Competition at PLDI conference. *June 2009*

Best student presentation at The International Symposium on Memory Management for "No Bit Left Behind" paper. *June 2008*

NSF graduate student award for East Asia and Pacific Summer Institute in Australia. While visiting, gave research talks at Australian National U, U Melbourne, and U New South Whales. *Summer 2008*

UT Computer Science Teaching Assistant Excellence Award. *Fall 2003*

Personal Running half-marathons, sprint and olympic triathlons, black belt in Kung Fu

Experience

UT CS - Programming Languages/Compilers Research Group *Austin, TX*
Graduate Research Assistant *January 2004 - October 2010*

Research on improving performance with dynamic optimizations in a Java virtual machine, focusing on memory management, developing primarily in Jikes RVM. Changed the heap to have a discontiguous array layout with indirection to fixed-sized *arraylets*, dynamically compressing arraylets to save space and improve memory efficiency. Currently looking into software-hardware cooperative solutions to utilize memory resources and bandwidth efficiently while saving traffic and cache pollution.

IBM TJ Watson - Dynamic Optimization Group *Hawthorne, NY*
Research Intern *June 2007 - December 2007*

Optimizing page faults in memory-constrained environments through cooperation of the garbage collector and operating system by changing how the collector traverses and organizes objects.

Intel - Managed Runtime Division *Hillsboro, OR*
Research Intern *June 2005 - December 2005*

Made a Java virtual machine cache-coherent non-uniform memory access (cc-NUMA) aware with dynamic profile-guided object migration. Used hardware performance monitors to inform migration of objects between threads with the garbage collector.

Sun Microsystems - Directory Server Group *Austin, TX*
Intern *Summer 2003*

Developed system management prototype web application using Jato and Lockhart framework that is able to install and manage server software.

Teaching

UT CS - Introduction to Computer Programming: C++ *Austin, TX*
Assistant Instructor *Fall 2009, Spring 2010*

Designed a course to introduce the C++ language to students who had prior programming experience in other languages. Taught the 1 credit class focusing on the details of C++, including weekly programming assignments and quizzes.

UT CS - Honors Computer Organization *Austin, TX*
Graduate Teaching Assistant - Steve Keckler *Spring 2004*

Taught basic building blocks of computer systems, including high-level understanding of the compiler, operating system, assembler, instruction set, and hardware.

UT CS - Honors Computer Architecture *Austin, TX*
Graduate Teaching Assistant - Steve Keckler *Fall 2003*

Received annual **TA Excellence Award** from department of CS for this work. Taught computer architecture fundamentals: assembly language programming, hardware performance analysis, instruction set design, datapaths, pipelining, and memory systems including caches and virtual memory.

UT CS - Computer Fluency *Austin, TX*
Graduate Teaching Assistant - Roger Priebe *Spring 2003*

Taught high-level "what are computers" class for non-majors. This included computer organization, number representation and storage, algorithms, programming languages, and networking.

UT CS - Elements of Computing and Programming *Austin, TX*
Graduate Teaching Assistant - Rober Priebe *Fall 2002*

Taught introductory programming to Java, including object-orientation, variables and data types, classes, control structures, loops, methods, and arrays.

Service and Development

Invited to join Upsilon Pi Epsilon, International Honor Society for Computing Sciences *Fall 2005*

Sponsored by CRA-W to attend Grad Cohort Workshop for women *Spring 2005*

Member of UT's Women and Minorities in Computer Sciences committee *Fall 2004 - Spring 2005*

Invited to present session at UT's Graduate Student Instructor Seminar on "Leading Effective Discussions in Science Classes" *Fall 2004*

Member of UT CS Gradfest committee, organizing prospective PhD student weekend *Spring 2004*

Member of UT's Graduate Representative Association of Computer Sciences *Fall 2003 - Spring 2004*