

MARIA JUMP

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Education

- 08/00 - current **Pursuing Doctorate in Computer Science, The University of Texas at Austin, Austin, Texas**
Researching ways to exploit the underlying runtime of managed languages to heighten program understanding and ease debugging of heap-based bugs. Developed two synergistic techniques for gathering heap statistics at very low overhead (supervising advisor: **Kathryn McKinley**). Additionally researched topics in computational geometry including three-dimensional SuperResolution and protein crystallography analysis (advisor: Nina Amenta)
- 08/00 - 12/05 **Masters of Science in Computer Sciences, The University of Texas at Austin, Austin, Texas**
- 09/98 - 05/99 **Bachelor of Science in Computer Science, Cum Laude, University of Maryland, College Park, Maryland**
Researched topics in interactive ray-tracing as Senior Summer Scholar (supervisor: David Mount) and human computer interaction as a Faculty Research Assistant (supervisor: Ben Bederson).
- Spring 96 **Northern Virginia Community College, Alexandria, Virginia**
- 08/83 - 05/87 **Bachelor of Science in Forensic Chemistry, Ohio University, Athens, Ohio**

Honorary Distinctions

- Fellowships & Awards **Intel Fellowship**, The University of Texas at Austin, Fall 2007 - Spring 2008
MCD Fellowship, The University of Texas at Austin, Fall 2000 - Spring 2004
Senior Summer Scholar, University of Maryland, College Park, Summer 1998

Publications

- In Preparation **Arity Analysis: Can It Replace Shape Analysis?**
Maria Jump and Kathryn S. McKinley, to be submitted to OOPSLA 2008
- Conference Papers **Cork: Dynamic Memory Leak Detection for Garbage-Collected Languages**
Maria Jump and Kathryn S. McKinley. In Proceedings of the 34th Annual ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages, Nice, France, pp. 33--38, January 2007 (Acceptance rate: 18%).
- The DaCapo Benchmarks: Java Benchmarking Development and Analysis**
Stephen M. Blackburn, Robin Garner, Chris Hoffman, Asjad M. Khan, Kathryn S. McKinley, Roten Bentzur, Amer Diwan, Daniel Feinberg, Daniel Frampton, Samuel Z. Guyer, Martin Hirzel, Antony Hoskins, Maria Jump, Han Lee, J Eliot B Moss, Aashish Phansalkar, Darko Stefanovic, Thomas VanDrunen, Daniel von Dincklage, and Ben Wiedermann, In OOPSLA 06: Proceedings of the 20th Annual ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications, Portland, Oregon, USA, pp. 191--208, October 2006 (Acceptance rate: 17%).
- Dynamic Object Sampling for Pretenuring**
Maria Jump, Stephen M. Blackburn, and Kathryn S. McKinley. In Proceedings of the 2004 International Symposium on Memory Management, Vancouver, British Columbia, Canada, pp. 152--162, October 2004 (Acceptance Rate: 35%).
- Technical Reports **Pretenuring Based on Escape Analysis**
Maria Jump and Ben Hardekopf, Technical Report TR-03-48, Department of Computer Science, The University of Texas at Austin, Austin, Texas, 2003.
- Cork: Dynamic Memory Leak Detection for Garbage-Collected Languages (extended)**
Maria Jump and Kathryn S. McKinley. Technical Report TR-06-07, Department of Computer Science, The University of Texas at Austin, Austin, Texas, 2006.

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Professional Activities

- Conferences Submission Chair for PLDI 2007
Reviewed papers under submission for PLDI 2008, OOPSLA 2007, PLDI 2007, PLDI 2006, OOPSLA 2006, OOPSLA 2003
- Organizations Student Representative of Graduate Research Association of Computer Science, Fall 2002
Upsilon Pi Epsilon, since 2001
Chair and Founder of the **Society of Women in Computer Science**, 1998 - 1999
Golden Key Honor Society, since 1998
ACM Membership, since 1997
IEEE Membership, since 1998

Teaching Experience

- Assistant 08/06 - 05/07, The University of Texas at Austin, Austin, Texas
Instructor Designed and taught CS105 -- Introduction to Computer Programming: C++ during Fall 2006 and Spring 2007 including designing programming assignments, teaching lecture, addressing student's concerns, administering and grading exams, quizzes, and projects.
- Teaching 08/01 - 05/02, The University of Texas at Austin, Austin, Texas
Assistant Assisted professor with student concerns, grading projects and homework for Elements of Graphics (CS324E), a graphics course taught to non-majors, and Computer Graphics (CS354), the graphics course for CS majors.
- Teaching 01/98 - 12/98, University of Maryland, College Park, Maryland
Assistant Taught recitation sections of Computer Science I (CMSC114), an introduction course to Computer Science and C++ which required teaching new materials, addressing student's concerns, administering and grading exams, quizzes, and projects. Received **Excellence in Teaching** accommodation.
- Application 06/93 - 10/94, Morgan, Lewis & Bockius, Washington, DC
Trainer Designed and documented 2-3 hour courses covering features of all supported software. Automated repetitive tasks and internal forms with the use of macros in WordPerfect. Provided end-users support for all major software applications.

Professional Experience

- Software 10/99 - 08/00, CyberTrader (CyBerCorp), Inc., Austin, Texas
Engineer Worked as part of the BackOffice team responsible for the design and development of utilities used by the in-house brokerage for Risk Management, Account Administration, and Report Generation. Solely responsible for the on-going development and maintenance of CyBerOffice, an in-house brokerage tool which reports the state of any users account to the brokers.
- Software 07/99 - 09/99, TEAM Development, Austin, Texas
Engineer Worked as a contractor for Wayne-Dresser designing and developing credit-card approval software for gasoline pumps.
- Software 05/96 - 05/99, Self-Employed, Gaithersburg, Maryland
Engineer One of a two-person team who developed Forensic 3, a DBMS used for the management of forensic information collected at the scene of a Mass Casualty Disaster. Participated in all aspects of the development process including determining the product requirements, writing Requirement Specification Document, designing user interface, implementing the product using Microsoft Visual C++ 5.0 and MFC, and creating the installation program using InstallShield 6.0. Designed and developed a secure web-based client for the collection of data from remote sources using Java 1.02 event model with both SMTP-based and CGI/Perl-based data submissions.