Scott E. Friedman

Resume/Curriculum Vitae

1473 W. Foster #2
Chicago, IL 60640
(314) 640 9077

Summary

I am a Computer Science Ph.D. student researching Artificial Intelligence at Northwestern University. My primary research interests within Artificial Intelligence are causal modeling, qualitative reasoning, analogical reasoning, and cognitive modeling. Upon completing my degree, I plan to continue teaching and researching Artificial Intelligence as a Professor of Computer Science. My additional expertise and teaching interests are object-oriented programming, software engineering, and robotic motion-planning.

Education

Ph.D. in Computer Science 2007-Current
Northwestern University
Dissertation in Artificial Intelligence (Cognitive Systems)

Master of Science in Computer Science 2003-2005
Washington University in St. Louis
Thesis: Dusty Caches to Save Memory Traffic

Bachelor of Science in Computer Science 1999-2003
Washington University in St. Louis
Minors: Philosophy, Writing

Research Experience

Northwestern University: Qualitative Reasoning Group 2007-Current
Graduate Research Assistant, advised by Professor Kenneth D. Forbus

- Awarded Robert Piros Fellowship
- Creating learning algorithms for generating qualitative commonsense models from examples
- Built and published theoretical and computational models of causal reasoning and conceptual change

Washington University: Distributed Object Computing Group 2003-2005
Graduate Research Assistant, advised by Professor Ron K. Cytron

- Co-developed *Liquid Architecture* (reconfigurable FPGA logic) platform.
- Devised and presented new *Dusty Cache* policy for thesis research using the Liquid Architecture platform.
- Architected real-time data structures with self-predicting performance for the Real-Time Specification for Java

Undergraduate Research Assistant 2000-2003

- Developed real-time hashtable implementation for ACE middleware
- Ported Boeing's Open Flight & Open Experimental Platforms to Java
- Designed and implemented thread synchronization strategies using aspect-oriented programming languages

Publications

Theses

Scott Friedman. (2005). Dusty Caches to Save Memory Traffic. *Thesis*. Master of Science in Computer Science, Washington University in St. Louis, MO.

Journals

Shobana Padmanabhan, Phillip Jones, David V. Schuehler, Scott J. Friedman, Praveen Krishnamurthy, Huakai Zhang, Roger Chamberlain, Ron K. Cytron, Jason Fritts, and John W. Lockwood. (2005). Extracting and Improving Microarchitecture Performance on Reconfigurable Architectures. *International Journal of Parallel Programming*, Volume 33, Issue 2 – 3. 115 - 136.

Conferences

Scott E. Friedman, Kenneth D. Forbus. (2008). Learning Causal Models via Progressive Alignment & Qualitative Modeling: A Simulation. *Proceedings of the 30th Annual Conference of the Cognitive Science Society (CogSci)*. Washington, D.C.

Workshops & Symposia

Scott E. Friedman, Kenneth D. Forbus. (2008). Learning Qualitative Causal Models via Generalization & Quantity Analysis. *Proceedings of the 22nd International Workshop on Qualitative Reasoning*. Boulder, CO.

Matthew Klenk, Scott E. Friedman, Kenneth D. Forbus. (2008). Learning Modeling Abstractions via Generalization. *Proceedings of the 22nd International Workshop on Qualitative Reasoning*. Boulder, CO.

Richard Hough, Phillip Jones, Scott Friedman, Roger Chamberlain, Jason Fritts, John Lockwood, Ron Cytron. (2006). Cycle-Accurate Microarchitecture Performance Evaluation. *IEEE Workshop on Introspective Architecture (WISA).*

Scott Friedman, Praveen Krishnamurthy, Roger D. Chamberlain, Ron K. Cytron, and Jason E. Fritts. (2005). Dusty Caches for Reference Counting Garbage Collection. *MEDEA Workshop.*

Scott Friedman, John Lockwood, Ron Cytron, Roger Chamberlain, and Jason Fritts. (2005). Dusty Caches for Reducing Reference-Counting Memory Traffic. *IEEE Workshop: Architecture Research using FPGA Platforms (WARFP), HPCA11 Conference.*

David V. Schuehler, Benjamin C. Brodie, Roger D. Chamberlain, Ron K. Cytron, Scott Friedman, Jason Fritts, Phillip Jones, Praveen Krishnamurthy, John W. Lockwood, Shobana Padmanabhan, and Huakai Zhang. (2004). Microarchitecture Optimization for Embedded Systems. *High Performance Embedded Computing (HPEC8) Workshop.*

Shobana Padmanabhan, Phillip Jones, David V. Schuehler, Scott Friedman, Praveen Krishnamurthy, Huakai Zhang, Roger Chamberlain, Ron K. Cytron, Jason Fritts, and John W. Lockwood. (2004). Extracting and Improving Microarchitecture Performance on Reconfigurable Architectures. *CASES CTCES Workshop.*

Scott Friedman, Nicholas Leidenfrost, Benjamin C. Brodie, and Ron K. Cytron. (2001). Hashtables for Embedded and Real-Time Systems. *IEEE Real-Time Embedded Systems (RTES) Workshop.*

Teaching Experience

Northwestern University 2008
Teaching Assistant: *CogSci 207: Introduction to Cognitive Modeling*
- Lectured, held review sessions and office hours, graded

Washington University School of Engineering 2001
Teaching Assistant: *CS342: Object-Oriented Software Development Laboratory*
- Ran laboratory sessions, designed laboratory assignments, graded

Flynn Park Elementary School 1999-2002
Volunteer Reading Tutor & Counselor
- Tutored students with special needs in reading comprehension.
- Counseled children with disciplinary problems.

Industry Experience

GMI 2005-2007
Programmer / Analyst
- Architected object-oriented framework for international document routing and digital signing in Microsoft .NET 2.0 framework
- Collaborated across projects as design/technology consultant
- Presented object-oriented frameworks and design patterns to developers

Programmer / Analyst Intern 2004
- Collaborated with strategic sales administrators to design and deploy toolset to monitor field sales activity and steward Oracle databases

Ultradata Systems, Inc. 2000
Software Design for Embedded Systems
- Designed and implemented production-quality software for the *Travelstar 24* portable GPS product
- Programmed navigation framework in Java, including sorting, shortest-path, and approximate string matching modules

Honors, Fellowships, and Committees

Northwestern University Graduate Committee	2008-Current
Northwestern University Robert Piros Fellowship	2007-2008
Association for Computing Machinery (ACM)	2001-2005
Washington University Dean's List	2002-2005
Cum Laude Honors	2003
National Merit Scholarship	1999-2003
Washington University Leadership through Service	1999-2000

Coursework & Proficiencies

Graduate Coursework	Artificial Intelligence, Cognitive Science, Machine Learning, Mobile Robotics & Motion Planning, Computer Graphics, Project Management
Languages	Lisp, C/C++, Java, .NET 1.0-2.0 Frameworks, PHP, DHTML/Javascript,

	XML/XSL/DOM, SQL, Python, Actionscript
Operating Systems	Windows, Linux, Mac OS