Andrew Hilton

August 23, 2016

125 E. Seeman St
Durham, NC. 27701

919-886-3228
adhilton@ee.duke.edu
http://people.ee.duke.edu/~adh39

Education

2010	**PhD in Computer Science**
	University of Pennsylvania, Philadelphia, PA
	Advisor: Amir Roth
	Dissertation Title: "Energy Efficient Load Latency Tolerance: Single-thread Performance For the Multi-Core Era"
2004	**Masters of Science in Computer Science**
	Georgia Institute of Technology, Atlanta, GA
	GPA: 4.0
	Advisor: Olin Shivers
2003	**Bachelors of Science in Computer Science**
	Georgia Institute of Technology, Atlanta, GA
	GPA: 4.0

Full Time Positions Held

2012–	**Assistant Professor of the Practice**
	ECE Department, Duke University. Durham, NC
	Secondary Appointment in Computer Science
2010–2012	**Advisory Engineer**
	IBM, Research Triangle Park, NC
2004–2010	**Graduate Research Assistant**
	Computer and Information Science Department, University of Pennsylvania, Philadelphia, PA
2003–2004	**Graduate Research Assistant**
	College of Computing, Georgia Institute of Technology, Atlanta, GA

Part Time Positions and Internships

2011–2012	**Adjunct Professor**
	Department of Computer Science, Duke University, Durham, NC
2009	**Adjunct Professor**
	Ursinus College, Collegeville, PA
2007	**Intern**
	Intel Corporation, Hudson, MA
2003	**Intern**
	Software Quality Management Resources, Alpharetta, GA
2000–2003	**Teaching Assistant**
	College of Computing, Georgia Institute of Technology, Atlanta, GA
2000	**Intern**
	ARINC, Inc. Warner Robins, GA

Andrew Hilton

Page 1 of 4

Honors and Awards

2015	Klein Family Distinguished Teaching Award
2015	Pratt-school recognition for teaching excellence
2012	Publication nominated for Best Paper Award: Flexible Register Management using Reference Counting
2008–2009	Graduate Fellow for Teaching Excellence
2003	Outstanding Undergraduate

Textbooks Written

All of Programming Andrew Hilton and Anne Bracy, 2015. Edition 0. `http://aop.cs.cornell.edu`

Courses Taught

Engineering Software For Maintainability Spring 2014–2016 at Duke University

Programming, Data Structures, and Algorithms Fall 2013–2016, Spring 2013 at Duke University

Fundamentals of Computer Systems and Engineering Fall 2012–2015 at Duke University

Compiler Construction Spring 2013–2016, Fall 2012 at Duke University
> **Fall 2012 Student Course Evaluations in Top 5% University-wide**

Computer Organization and Design Fall 2012, Spring 2012 at Duke University

Introduction to Computer Science Spring 2009 at Ursinus College

Computer Architecture and Organization Spring 2009 at Ursinus College

Special Topics: C++ Spring 2008, Spring 2007 at University of Pennsylvania

Massive Open Online Courses (MOOCS)

Programming and the Web For Beginners.
`https://www.coursera.org/learn/duke-programming-web/`
Andrew Hilton, Owen Astrachan, Susan Rodger, and Robert Duvall.
Coursera, September 2015.

Java Programming: Solving Problems With Software.
`https://www.coursera.org/learn/java-programming`
Andrew Hilton, Owen Astrachan, Susan Rodger, and Robert Duvall.
Coursera, October 2015

Java Programming: Array, Lists, and Structured Data.
`https://www.coursera.org/learn/java-programming-arrays-lists-data`
Andrew Hilton, Owen Astrachan, Susan Rodger, and Robert Duvall.
Coursera, November 2015

Java Programming: Principles of Software Design.
`https://www.coursera.org/learn/java-programming-design-principles`
Andrew Hilton, Owen Astrachan, Susan Rodger, and Robert Duvall.
Coursera, December 2015

Java Programming: a DIY version of Netflix and Amazon recommendation engines.
`https://www.coursera.org/learn/java-programming-recommender`
Andrew Hilton, Owen Astrachan, Susan Rodger, and Robert Duvall.
Coursera, January 2015

Refereed Journal Publications

SMT-Directory: Efficient Load-Load Ordering for SMT
Andrew Hilton and Amir Roth.
IEEE Computer Architecture Letters, Vol. 12, May 2010.

iCFP: Tolerating All-Level Cache Misses in In-Order Processors
Andrew Hilton, Santosh Nagarakatte, and Amir Roth.
IEE MICRO's Top Picks of Architecture Conferences of 2009 (MICRO Top Pics), Jan-Feb 2010.

Selected Refereed Conference Publications

PoisonIvy: Safe Speculation For Secure Memory
Tamara S. Lehman, Andrew D. Hilton, and Benjamin C. Lee.
49th Intnational Symposium on Microarchitecture (MICRO), Oct. 2016

Decoupling Loads for Nano-instruction Set Computers
Ziqiang Huang, Andrew D. Hilton, and Benjamin C. Lee.
43rd International Symposium on Computer Architecture (ISCA), June. 2016

Multi-Program Benchmark Definition
Adam N. Jacobvitz, Andrew D. Hilton, and Daniel J. Sorin.
16th International Symposium on Performance Analysis of Systems and Software (ISPASS), March. 2015

Flexible Register Management using Reference Counting
Steven Battle, Andrew Hilton, Mark Hempstead, and Amir Roth.
18th International Symposium on High-Performance Computer Architecture (HPCA), Feb. 2012

BOLT: Energy-Efficient Out-of-Order Latency-Tolerant Execution
Andrew Hilton and Amir Roth.
16th International Symposium on High-Performance Computer Architecture (HPCA), Jan., 2010.

CPROB: Checkpoint Processing with Opportunistic Minimal Recovery
Andrew Hilton, Neeraj Eswaran, and Amir Roth.
18th International Conference on Parallel Architectures and Compilation Techniques (PACT), Sep., 2009.

Decoupled Store Completion/Silent Deterministic Replay: Enabling Scalable Data Memory for CPR/CFP Processors
Andrew Hilton and Amir Roth.
36th International Symposium on Computer Architecture (ISCA), Jun., 2009.

iCFP: Tolerating All-Level Cache Misses in In-Order Processors
Andrew Hilton, Santosh Nagarakatte and Amir Roth.
15th International Symposium on High-Performance Computer Architecture (HPCA), Feb., 2009.

Ginger: Control Independence Using Tag Rewriting
Andrew Hilton and Amir Roth.
34th International Symposium on Computer Architecture (ISCA), Jun. 9-13, 2007.

Patent Applications

Processor with hybrid pipeline capable of operating in out-of-order and in-order modes.
Miguel Comparan, Andrew D. Hilton, Hans M. Jacobson, Brian M. Rogers, Robert A. Shearer, Ken V. Vu, Alfred T. Watson, III
US20140281402 A1. Mar 13, 2013.

Load Latency Speculation In An Out-Of-Order Computer Processor
Timothy H. Heil, Andrew D. Hilton, Adam J. Muff
US20140223144 A1. Mar 5, 2013.

Branch history cache and method
Timothy H. Heil, Brent F. Hilgart, Andrew D. Hilton
US20140075167 A1. Sep 13, 2012.

Branch Prediction For Indirect Jumps
Andrew D. Hilton, Brian M. Rogers, Kenichi Tsuchiya
US20140019737 A1. Jul 16, 2012.

Refereed Workshop Publications

FIESTA: A Sample-Balanced Multi-Program Workload Methodology
Andrew Hilton, Neeraj Eswaran, and Amir Roth.
5th Workshop on Modeling, Benchmarking, and Simulation, Jun., 2009.

Professional Service

Google Educational Advisory Council Member 2016–present.

ISCA External Review Committee Member (2016, 2015)

IISWC Program Committee Member (2016)

ISPASS Program Committee Member (2016, 2015, 2014), Workshop/Tutorials Chair (2015)

HPCA External Review Committee Member (2016, 2015)

MICRO Program Committee Member (2014), External Review Committee Member (2015)

ICCD Finance co-chair (2013)

Departmental Service

2014–	Co-chair of Diversity Committee
2014–	Associate Director of DEEP-SEA Program
2013–	Managing Director of Graduate Studies
2012–	Member of Undergraduate Studies Committee

Grants

Coalitional game theory for co-locating software on shared hardware.
Co-PI with Ben Lee (PI)
National Science Foundation, $400K, 2015–2018.

Introductory Software Specialization Course Development Grant.
Co-PI with Susan Rodger (PI), Owen Astrachan (Co-PI), and Robert Duvall (Co-PI).
Coursera, $300K, 2015–2017.

Afterburner: Efficient Performance Scaling via Post-Retirement Processing.
Principle Investigator
NSF subcontract from University of Pennsylvania, $60K, 2013–2014.