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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

- 2018– **Associate Professor of the Practice**
- 2012–2017 **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

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

Programming, Data Structures, and Algorithms Fall 2013–2017, Spring 2013 at Duke University

Compiler Construction Spring 2013–2018, Fall 2012 at Duke University

Engineering Robust Server Software Spring 2017–2018 at Duke University

Engineering Software For Maintainability Spring 2014–2016 at Duke University

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

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 Fundamentals.

<https://www.coursera.org/learn/programming-fundamentals/>

Andrew Hilton, Genevieve Lipp, and Anne Bracy.

Coursera, October 2017.

Writing, Running, and Fixing Code in C.

<https://www.coursera.org/learn/writing-running-fixing-code/>

Andrew Hilton, Genevieve Lipp, and Anne Bracy.

Coursera, November 2017.

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.

IEEE MICRO's Top Picks of Architecture Conferences of 2009 (MICRO Top Picks), Jan-Feb 2010.

Selected Refereed Conference Publications

MAPS: Understanding Metadata Access Patterns in Secure Memory

Tamara S. Lehman, Andrew D. Hilton, and Benjamin C. Lee.

19th International Symposium on Performance Analysis of Systems and Software (ISPASS), April. 2018
Best Paper

PoisonIvy: Safe Speculation For Secure Memory

Tamara S. Lehman, Andrew D. Hilton, and Benjamin C. Lee.

49th International 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

NSF Review Panel 2017.

Google Educational Advisory Council Member 2016–present.

ISCA Program Committee Member (2017), External Review Committee Member (2016, 2015)

IISWC Program Committee Member (2017, 2016), General Chair (2018)

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

2017	Search Committee Chair: Professor of the Practice search
2014–	Co-chair of Diversity Committee
2013–	Managing Director of Graduate Studies
2012–	Member of Undergraduate Studies Committee
2014–2016	Associate Director of DEEP-SEA Program

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.