Luke K. McDowell

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Current

Assistant Professor, Dept. of Computer Science, U.S. Naval Academy

Education

UNIVERSITY OF WASHINGTON Seattle, WA
Ph.D., Computer Science, granted August 2004

M.S., Computer Science, granted December 2001.
Overall GPA: 3.95 / 4.0
Dissertation: "Meaning for the Masses: Theory and Applications for Semantic Web and Semantic Email Systems."

PRINCETON UNIVERSITY Princeton, NJ
B.S.E., Electrical Engineering, granted June 1997, Highest Honors
Overall GPA: 4.2 / 4.0 (A = 4.0, A^+ = 4.3)
Senior Independent Work: "An Application-Specific Coherency Protocol Using Configurable Hardware"

Awards

- Nominated for the 2004 ACM Distinguished Dissertation Award.
(Selected by the UW Computer Science dept.; one or two students chosen each year.)
- Primary author of "Semantic Email," Runner-up for Best Paper Award at WWW2004
(7 of 74 accepted papers were so chosen)
- 2003-2004 Microsoft Endowed Graduate Fellowship (1 year award)
- 2000-2001 Department of Computer Science & Engineering Fellowship (1 year award)
- 1999-2003 NSF Graduate Research Fellowship (3 year award)
- 1999-2002 ARCS (Achievement Rewards for College Scientists) Fellowship (3 year award)
- 1997 James Hayes-Edgar Palmer Prize in Engineering (awarded by the Princeton Engineering School to one or two engineering seniors who "have manifested excellent scholarship, a marked capacity for leadership, and promises of creative achievement in engineering")
- 1997 Computer Engineering Excellence Award (awarded by the Princeton Electrical Engineering department)
- 1996 Elected to Sigma Xi, Tau Beta Pi, and Phi Beta Kappa
- 1996 Barry Goldwater Scholarship (one of 28 engineering students selected nationwide)
- 1996 George B. Wood Legacy Junior Prize
- 1995 George B. Wood Legacy Sophomore Prize

(each George B. Wood prize is awarded by Princeton to one student per year in recognition of "exceptional academic achievement")

Teaching Experience

Instructor, CSE 413: Programming Languages and Their Implementation Fall 2004
Taught class of approximately 35 students (non-majors).

Instructor, CSE 326: Data Structures & Algorithms Summer 2003
Taught a class of 23 students (mostly CS majors). Designed syllabus, delivered all lectures, and managed staff of two undergraduate TAs. Overall student rating for the course 4.7/5.0. URL: http://www.cs.washington.edu/education/courses/cse326/03su/

Guest Lecturer, CSE 471: Computer Design and Organization Fall 2000
Taught series of four lectures focusing on multiprocessors and synchronization.

Teaching Assistant, CSE 142: Computer Programming I Fall 2000
Taught two discussion sections each week (regular and advanced), graded, held office hours.

Teaching Assistant, CSE 548: Computer Architecture Winter 2000
Designed assignments and projects, graded, held office hours.

Volunteer Tutor, Various courses 1999-2004
CSE 370: Intro to Digital Design (Winter 2001, Fall 2003)
CSE 378: Machine Organization (Spring 2000, Fall 2001, Spring 2002, Winter 2004)
CSE 477: Digital and Embedded Systems (Fall 1999)

Research Experience

University of Washington, Seattle, WA 1999-2004
Research Assistant, 2002 - 2004 (Advisors: Oren Etzioni and Alon Halevy)
Research Assistant, 2000 - 2002 (Advisors: Susan Eggers and Steve Gribble)

Microsoft Research, Redmond, WA Summer 2000
Research Intern, Software Productivity Tools Group
Designed and implemented specification language for a novel event-based software architecture designed to improve server performance. This work eventually led to the project for my M.S. degree and a publication in PPoPP 2003.

Sarnoff Corporation, Murray Hill, NJ 1997-1999
Associate Member Technical Staff, 1999
Senior Technical Associate, 1997-1999
Implemented world's first video-rate electronic video stabilization in full color, as well as the first video-rate color mosaic construction. Developed multiprocessor software libraries used for low-level hardware communication as well as high-level image alignment and processing. System deployed for commercial and military customers.

Intel Corporation, Santa Clara, CA Summer 1996
Intern Software Engineer. Developed and tested an experimental software analysis tool for use in studying and optimizing chip production.

Princeton Electrical Engineering Department, Princeton, NJ Summer 1994
Research Assistant. Developed program to automate high-purity crystal growth chamber.

Service

Reviewer, 2003 and 2004 International Semantic Web Conferences

Editor, 2002-2003, 2003-2004 Univ. of Wash. Computer Science *Who's Who* Collection

Volunteer, 2002 Univ. of Wash. GEAR UP program (focuses on helping more students from disadvantaged backgrounds go on to college).

Organizer, 2001-2002 Univ. of Wash. Computer Science Graduate Student Seminars

Reviewer, 2000 Workshop on Solving the Memory Wall Problem

Member, 2000-2001 Univ. of Wash. Computer Science Prospective Students Committee

Volunteer Tutor, 1999-2004 (see "Teaching Experience")

Peer-reviewed Publications

DATABASES AND THE SEMANTIC WEB

- **Semantic Email: Theory and Applications.** Luke McDowell, Oren Etzioni, and Alon Halevy. To appear, Journal of Web Semantics, 2004.
- **The Specification of Agent Behavior by Ordinary People: A Case Study.** Luke McDowell, Oren Etzioni, and Alon Halevy. To appear, Third International Semantic Web Conference (ISWC 2004), November 2004. (48/205 papers accepted = 23.4%)
- **Semantic Email.** Luke McDowell, Oren Etzioni, Alon Halevy, and Henry Levy. Thirteenth International World Wide Web Conference (WWW2004), May 2004. (74/506 papers accepted = 14.6%)
- **Mangrove: Enticing Ordinary People onto the Semantic Web via Instant Gratification.** Luke McDowell, Oren Etzioni, Steven Gribble, Alon Halevy, Henry Levy, William Pentney, Deepak Verma, and Stani Vlasseva. Second International Semantic Web Conference (ISWC 2003), October 2003. (49/262 papers accepted = 18.7%)
- **Semantic Email: Adding Lightweight Data Manipulation Capabilities to the Email Habitat.** Oren Etzioni, Alon Halevy, Henry Levy, and Luke McDowell. Sixth International Workshop on the Web and Databases (WebDB 2003), June 2003. (17/67 papers accepted = 25.4%)
- **Crossing the Structure Chasm.** Alon Halevy, Oren Etzioni, AnHai Doan, Zachary Ives, Jayant Madhavan, Luke McDowell, Igor Tatarinov. First Biennial Conference on Innovative Data Systems Research (CIDR 2003), Jan 2003. (27/60 papers accepted = 45%)
- **An Evolutionary Approach to the Semantic Web.** Oren Etzioni, Steve Gribble, Alon Halevy, Hank Levy, and Luke McDowell. Poster presentation at the First International Semantic Web Conference (ISWC 2002), June 2002.

COMPUTER ARCHITECTURE

- **Improving Server Software Support for Simultaneous Multithreaded Processors.** Luke McDowell, Susan Eggers, and Steven Gribble. ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP 2003), June 2003. (20/45 papers accepted = 44.4%)
- **An Evaluation of Speculative Instruction Execution on Simultaneous Multithreaded Processors.** Steve Swanson, Luke McDowell, Michael Swift, Susan Eggers, and Henry Levy. ACM Transactions on Computer Systems 21(3): 314-340 (2003).

COMPUTER SCIENCE EDUCATION

- **Best Practices for Lecturing with Digital Ink**. Richard Anderson, Ruth Anderson, and Luke McDowell. To be submitted to ACM Technical Symposium on Computer Science Education (SIGCSE 2005), February 2005.

Invited Talks

Bringing Semantics to Ordinary People. Amazon.com (Seattle, WA), September 2004.

Key Conditions for Bringing Semantics to the Masses. Evergreen State College PLATO Royalty Lecture Series (Evergreen, WA), April 2004.

Mangrove: Enticing Ordinary People onto the Semantic Web via Instant Gratification. Swarthmore College Comp. Science Dept. (Swarthmore, PA), December 2003.