

JESSEN T. HAVILL

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Education

The College of William and Mary, Williamsburg, Virginia
Doctor of Philosophy, Computer Science (August, 1998)

Thesis: Analysis of Algorithms for Online Routing and Scheduling in Networks
Master of Science, Computer Science (May, 1994)

Bucknell University, Lewisburg, Pennsylvania
Bachelor of Arts (Magna Cum Laude), Computer Science and Religion (May, 1992)

Professional Experience

Professor of Mathematics and Computer Science (2011 –)
Associate Professor of Mathematics and Computer Science (2004 – 2011)
Department Chair (2006 – 2009)
Assistant Professor of Mathematics and Computer Science (1998 – 2004)
Department of Mathematics and Computer Science, Denison University, Granville, Ohio
Instructor / Teaching Assistant (Fall, 1992 – Spring, 1998)
Department of Computer Science, The College of William and Mary, Williamsburg, Virginia

Courses Taught at Denison University

FYS 102: Algorithmics (Fall 2005)
FYS 102: Bioinformatics (Fall 2007)
CS 111: Foundations of Computing for Scientific Discovery (Fall 2009, 2010; Spring 2009–2011)
CS 171: Introduction to Computer Science (Fall 1998–2001; Spring 2004)
CS 173: Intermediate Computer Science (Spring 2004, 2005, 2010, 2011)
CS 174: Discrete Mathematics (Spring 2008)
CS 200: Mathematical Typesetting (Fall 2001)
CS 200: Mac OS X Programming with Cocoa and Objective C (Fall 2003)
CS 200: DNA Algorithms (Spring 2008)
CS 271: Data Structures [and Algorithm Analysis I] (Fall 2001, 2003, 2005, 2007, 2009, 2010)
CS 272: Data Structures and Algorithm Analysis II (Spring 2002–2004, 2006)
CS 281: Computer Organization (Fall 1998, 1999; Spring 2000, 2001, 2005, 2009)
CS 334: Theory of Computation (Fall 2006)
CS 361/362: Directed Study (Fall 2000; Spring 1999 (3), 2001 (2); 2002 (2))
CS 363: Independent Study (Fall 2001 (2); Spring 2002 (3))
CS 372: Operating Systems (Spring 1999, 2000; Fall 2000–2003, 2008)
CS 375: Computer Networks (Fall 1999; Spring 2001, 2002, 2005)

CS 377: Database Systems (Spring 1999)

Supervised Student Research

Using Computational Algorithms to Further Examine and Visualize Riboswitch Domains, Joseph Sheets, Summer 2011 (co-advised with Jeff Thompson, Biology)

Online Malleable Job Scheduling, Nathaniel Kell, Summer 2011

Online malleable job schedule setup time as a logarithmic function of k processors, Seth Lyles, Summer 2011

Alternative Metrics for Online Ring Routing, Neal Barcelo, Summer 2010 and Senior Research, 2010–2011

Neal Barcelo, Bryce Pioske, Jessen T. Havill. *Alternative Performance Metrics for Online Ring Routing*, Proceedings of the Midstates Conference For Undergraduate Research in Computer Science and Mathematics (MCURCSM), 2010.

Presentation: *Alternative Performance Metrics for Online Ring Routing, part I*, MAA Mathfest Pi Mu Epsilon Paper Session, Pittsburgh, August 2010.

Alternative Metrics for Analyzing Online Ring Routing Algorithms, Bryce Pioske, Summer 2010

Presentation: *Alternative Performance Metrics for Online Ring Routing, part II*, MAA Mathfest Pi Mu Epsilon Paper Session, Pittsburgh, August 2010.

Implementing a Navigation Algorithm for Swarm Robots Inspired by Slime Mold Aggregation, Shaun McFall, Summer 2009 and Senior Research, 2009–2010

Online Routing of Splittable Flows on Torus Networks, Josh Buell, Summer 2009 and Senior Research (with Recognition), 2009–2010

Investigating TPP Riboswitches in Archaea Using Computer Algorithms, Chinmoy Bhatiya, Honors Project, 2008–2009 (co-advised with Jeff Thompson, Biology)

Poster: *An Algorithm for Detecting Riboswitches in Archaea*, Ohio Collaborative Conference on Bioinformatics (OCCBIO), 2009.

Algorithms for Counting Links in K_n , Jeffrey Camealy, Summer 2007

Presentation: *Algorithms for Counting Links in K_n* , Ohio Five Summer Science Research Symposium, Ohio Wesleyan University, July 2007.

Interlocked Linkages: Finding a Key, Amanda Moore, Summer 2007

Presentation: *Interlocked Linkages: Finding a Key*, MAA Mathfest Pi Mu Epsilon Paper Session, San Jose, August 2007. Winner of the SIAM award for outstanding student exposition and research in applied mathematics.

Online Algorithms for Packet Routing on Rings, Mete Tuzcu, Summer 2005

Online Algorithms for Packet Routing on Rings, Pancham Gajjar, Summer 2004

Automatic Service Discovery for Content Addressable Storage, Rahul Parikh, Summer 2003

Interfaces for Content Addressable Storage Providers and Clients (co-advised with Thomas Bressoud), Stoyan Paunov, Summer 2003

Stoyan Paunov, Thomas Bressoud, and Jessen Havill. *An HTTP-Based Protocol for Access of Content Addressable Storage (CAS)*, Proceedings of the Midstates Conference For Undergraduate Research in Computer Science and Mathematics (MCURCSM), pp. 19–25, 2003.

Content Addressable Storage Provider in Linux (co-advised with Thomas Bressoud), Vesselin Dimitrov, Senior Honors Project, 2002–2003

Mobile Room Condition Inventory System, Rohit Bansal, Senior Honors Project, 2002–2003

Scheduling Jobs on Parallel Machines with Overhead, Vesselin Dimitrov, Summer 2002

Jessen T. Havill, Weizhen Mao and Vesselin Dimitrov. Improved Parallel Job Scheduling with Overhead. In *Proceedings of the Seventh Joint Conference on Information Sciences*, Research Triangle Park, North Carolina, pp. 393–396, September 2003.

Online Algorithms for Routing and Scheduling on Ring Networks, Rohit Bansal, Summer 2002

An Online Algorithm for Parallel Job Scheduling, Matthew Winkler, Senior Research, 2000–2001

Issues in Operating Systems Portability, James Deverick, Senior Research, Spring 2000

Refereed Publications

Jessen T. Havill and Kevin R. Hutson. Optimal Online Ring Routing. *Networks* 57(2), pp. 187–197, 2011.

Jessen T. Havill. Online Malleable Job Scheduling for $m \leq 3$. *Information Processing Letters* 111(1), pp. 31–35, 2010.

Karen Anewalt, Jessen Havill, Chang Liu, and Jennifer Polack-Wahl. Computer Scientists Wanted! Strategies for Increasing Interest in Computer Science (panel summary). In *Proceedings of the 40th Annual ASEE/IEEE Frontiers in Education Conference*, F3B1–2, October 2010.

Chinmoy I.S. Bhatyia, Jessen T. Havill, and Jeffrey S. Thompson. An Algorithm for Detecting TPP Riboswitches in Archaea (poster). *Ohio Collaborative Conference on Bioinformatics (OCCBIO)*, Cleveland, Ohio, June 2009.

Jessen T. Havill and Weizhen Mao. Competitive Online Scheduling of Perfectly Malleable Jobs with Setup Times. *European Journal of Operational Research* 187(3), pp. 1126–1142, 2008.

Jessen T. Havill and Lewis D. Ludwig. Technically Speaking: Fostering the Communication Skills of Computer Science and Mathematics Students. In *Proceedings of the 38th ACM SIGCSE Technical Symposium on Computer Science Education*, pp. 185–189, 2007.

Jessen T. Havill, Weizhen Mao and Vesselin Dimitrov. Improved Parallel Job Scheduling with Overhead. In *Proceedings of the Seventh Joint Conference on Information Sciences*, Research Triangle Park, North Carolina, pp. 393–396, September 2003.

Jessen T. Havill. Online Packet Routing on Linear Arrays and Rings. In *Proceedings of the 28th International Colloquium on Automata, Languages and Programming*, Crete, Greece, Lecture Notes in Computer Science vol. 2076, pp. 773–784, July 2001.

Jessen T. Havill. A Competitive Online Algorithm for a Parallel Job Scheduling Problem. In *Proceedings of the 12th IASTED International Conference on Parallel and Distributed Computing and Systems*, Las Vegas, Nevada, pp. 611–616, November 2000.

Jessen T. Havill and Weizhen Mao. Greedy Online Algorithms for Routing Permanent Virtual Circuits. *Networks* 34(2), pp. 136–153, September 1999.

Jessen T. Havill and Weizhen Mao. On-line Algorithms for Hybrid Flow Shop Scheduling. In *Proceedings of the Fourth Joint Conference on Information Sciences*, Research Triangle Park, North Carolina, pp. 134–137, October 1998.

Jessen T. Havill and Weizhen Mao. Greedy On-line File Transfer Routing. In *Proceedings of the IASTED International Conference on Parallel and Distributed Systems*, Barcelona, Spain, pp. 225–230, 1997.

Jessen T. Havill, Weizhen Mao and Rahul Simha. A Lower Bound for On-line File Transfer Routing and Scheduling. In *Proceedings of the 31st Annual Conference on Information Sciences and Systems*, Baltimore, Maryland, pp. 936–941, 1997.

Jessen T. Havill. On-Line Update of Traveling Salesman Tours. In *Proceedings of the 34th Annual ACM Southeast Conference*, pp. 218–223, Tuskegee, Alabama, 1996.

Presentations

Natural Computing

Denison Tuesday Lunch Series (March, 2011)

Introducing Computation and Modeling to Liberal Arts Science Students (invited talk)

INFORMS 2010 Annual Meeting (November, 2010)

Computer Scientists Wanted! Strategies for Increasing Interest in Computer Science (panelist)

40th Annual IEEE Frontiers in Education Conference (October, 2010)

ReSearch and Other Reluctant Algorithms

Mathematics and Computer Science FaSt Talk (February, 2010)

CS 111: First Steps Toward (More) Interdisciplinary Computing at Denison

Denison Scientific Association (November, 2009)

CS 111: Foundations of Computing for Scientific Discovery

Mellon workshop: Computing and Mathematics Across the Sciences, Denison University (June, 2009)

That Clever Slime Mold

Denison University Biology 150 (April, 2009)

Computing Across the Sciences: Contributions, Experiences, Opportunities

Denison Scientific Association (October, 2008)

Decoding Life: Algorithmics Applied to Biology

Mathematics and Computer Science FaSt Talk (September, 2008)

Online Ring Routing

Eastern Great Lakes Theory Conference (rump session), Buffalo, New York (September, 2008)

Technically Speaking: Fostering the Communication Skills of Mathematics Students (panelist)

MAA MathFest, San Jose, California (August, 2007)

Technically Speaking: Fostering the Communication Skills of Computer Science and Mathematics Students

38th ACM SIGCSE Technical Symposium on Computer Science Education, Cincinnati, Ohio (March, 2007)

Online Algorithms for Packet Routing on Rings

Denison Scientific Association (January, 2005)

ReSearch and Other Reluctant Algorithms

Mathematics and Computer Science FaSt Talk (September, 2004)

Online Packet Routing on Linear Arrays and Rings

28th International Colloquium on Automata, Languages and Programming, Crete, Greece (July, 2001)

Online Packet Routing on Linear Arrays and Rings

Department of Math and Computer Science, Denison University (April, 2001)

A Competitive Online Algorithm for a Parallel Job Scheduling Problem

12th IASTED International Conference on Parallel and Distributed Computing and Systems, Las Vegas, Nevada (November, 2000)

A Competitive Online Algorithm for a Parallel Job Scheduling Problem

Department of Math and Computer Science, Denison University (September, 2000)

Online Algorithm Analysis: How Much is a Time Machine Really Worth?

Department of Mathematics, Oberlin College (March, 1999)

Analysis of Algorithms for Online Routing and Scheduling in Networks

Department of Computer Science, The College of William and Mary (July, 1998)

Greedy On-line File Transfer Routing

IASTED International Conference on Parallel and Distributed Systems, Barcelona, Spain (1997)

A Lower Bound for On-line File Transfer Routing and Scheduling

31st Annual Conference on Information Sciences and Systems, Baltimore, Maryland (1997)

On-Line Update of Traveling Salesman Tours

34th Annual ACM Southeast Conference, Tuskegee, Alabama (1996)

Other Professional Conferences Attended

Undergraduate Bioinformatics Education Conference, St. Vincent College, June 2011.

RECOMB – Bioinformatics Education, San Diego, California, May 2010.

Rebooting Computing Summit, Mountain View, California, January 2009.

Ohio Collaborative Conference on Bioinformatics (OCCBIO), Oxford, Ohio, June, 2007.

37th Technical Symposium on Computer Science Education, sponsored by the ACM Special Interest Group on Computer Science Education (SIGCSE), Houston, Texas, March, 2006.

35th Technical Symposium on Computer Science Education, sponsored by the ACM Special Interest Group on Computer Science Education (SIGCSE), Charlotte, North Carolina, March 3–7, 2004.

35th Annual ACM Symposium on Theory of Computing, San Diego, California, June 9–11, 2003.

32nd Technical Symposium on Computer Science Education, sponsored by the ACM Special Interest Group on Computer Science Education (SIGCSE), Charlotte, North Carolina, February 21–25, 2001.

12th ACM-SIAM Symposium on Discrete Algorithms, Washington, DC, January, 2001.

44th Annual Symposium of the Central Ohio Chapter of the ACM, Columbus, Ohio, May 12, 2000.

30th Technical Symposium on Computer Science Education, sponsored by the ACM Special Interest Group on Computer Science Education (SIGCSE), New Orleans, Louisiana, March 24–28, 1999.

Workshops and Seminars Attended

“Computation for Scientists” (organizer), Denison University, June 2010

“Advising and the Liberal Arts”, Denison University, May 2010

“Computing and Mathematics Across the Sciences” (co-organizer), Denison University, June 2009

“CS2: Denison” (panel organizer), Denison University, June 2008

“Science and the Public Intellectual”, Denison University, May, 2008

“Chairs’ Workshop on Negotiation and Conflict Resolution”, Denison University, January, 2008

“Race & Sexual Identity in the Multicultural Classroom”, Denison University, January, 2008

GLCA Academic Council, Ann Arbor, November 2005

“A Computer Science Conversation” with GLCA schools (faciliator and host), Denison University, September, 2001.

“Geographic Information Systems”, Denison University, July 12, 1999.

Principal Service Activities

Referee:

- *Journal of Parallel and Distributed Computing (Elsevier)*
- *Journal of Scheduling (Springer)*
- *European Journal of Operational Research (Elsevier)*
- *Computers & Operations Research (Elsevier)*
- *Journal of Combinatorial Optimization (Springer)*
- *Chapman & Hall/CRC Press*
- *The Handbook of Computer Networks (Wiley)*

- *ACM Transactions on Computing Education*
- *ACM Technical Symposium on Computer Science Education (ACM SIGCSE)*, 2001 –
- *ACM Southeast Conference*, 1999
- *College Mathematics Journal (MAA)*
- *Midstates Conference on Undergraduate Research in CS and Math (MCURCSM)*, 2003, 2004, 2007, 2009, 2010

Academic Affairs Council, Fall 2005 and 2010 –

University Honor Committee and Academic Integrity Board, 2009 – 2011

Founder and Faculty Advisor, Upsilon Pi Epsilon, Delta of Ohio Chapter, 2000 –

Faculty Advisor, Stibitz Computing Society, 1999 –

June Orientation, 2003 – 2005, 2008 – 2010

August Orientation, 2008 and 2009

Convener of Science Chairs, 2008 – 2009

Trustee, Granville Education Foundation, 2003 – 2009

- President, 2007 – 2009 (2 terms)
- Chair, Grants Committee, 2006 – 2007

Reader, AP Computer Science, 2006 – 2008

Judge, Ohio State Science Fair, 2008

Educational Technology Services Director Search Committee, Fall 2007

Web Services Manager Search Committee, Spring 2006

Panelist, New Faculty Orientation session "Balancing Teaching, Scholarship, and Service", January 2006

Representative to GLCA Academic Council, Fall 2005

Chair, Search Committee for Director of Computing Services, Fall 2004

Denison Scientific Association coordinator, 2003 – 2004

Information Resources Advisory Board (IRAB), Fall 2001 – Spring 2004

Area Coordinator Search Committee, Summer 2003

Search Committee for Director of Residential Life/Assistant Dean of Students, Summer 2003

Committee on Residential Life, Fall 2000 – Spring 2003

Learning Spaces Project Committee, Fall 2000 – Fall 2001

"Learning at Denison" Task Force, Spring 2000

Grants

Computation for Scientists (Project Coordinator; with Michael Fuson, David Goodwin, Daniel Homan, and Andrew McCall), GLCA New Directions Initiative, \$7,950 (2010)

Bringing Bioinformatics to Denison (with Jeff Thompson), GLCA New Directions Initiative, \$3,765 (2010)

Computation for Scientists (Project Coordinator; with Michael Fuson, David Goodwin, Daniel Homan, and Andrew McCall), Mellon Faculty Career Enhancement Grant, \$31,500 (2010)

Computing and Mathematics Across the Sciences (with Joan Krone), Mellon Faculty Career Enhancement Grant, \$18,050 (2009)

Honors and Awards

Robert C. Good Faculty Fellowship (2007)

Project Kaleidoscope Faculty for the 21st Century (2002)

Summer Professional Development Grant, Denison University (1999, 2000)

Professional Affiliations

Association for Computing Machinery (ACM)

ACM Special Interest Group on Automata and Computability Theory (ACM SIGACT)

ACM Special Interest Group on Computer Science Education (ACM SIGCSE)

Institute of Electrical and Electronics Engineers (IEEE) Computer Society

Institute for Operations Research and the Management Sciences (INFORMS)

Computer Professionals for Social Responsibility (CPSR)

Upsilon Pi Epsilon, Honor Society for the Computing Sciences

Mathematical Association of America (MAA)