

Erin Wolf Chambers

Curriculum Vitæ

Department of Computer Science
University of Illinois at Urbana-Champaign
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RESEARCH INTERESTS

Computational topology and geometry, discrete geometry, combinatorics and combinatorial algorithms, external and cache oblivious models of computation.

EDUCATION

Ph.D. in Computer Science (expected Spring 2008)

University of Illinois at Urbana-Champaign

Advisor: Jeff Erickson

Committee: Nina Amenta, Robert Ghrist, John Hart, Steve Lavalle

M.S. in Mathematics (May 2006)

University of Illinois at Urbana-Champaign

B.S. in Computer Science (May 2003)

Minor in Mathematics

University of Illinois at Urbana-Champaign

RESEARCH AND INDUSTRIAL POSITIONS

Research Assistant

Department of Computer Science, University of Illinois

Summer 2006, August 2007–present

Urbana, IL

Research Experience for Undergraduates (REU) Participant

Math Department, University of Illinois

Summer 2002

Urbana, IL

Co-op

CIRAS Program Office, Central Intelligence Agency

January 2001 - August 2001

Washington D.C.

Intern

Network Public Access Group, John Deere

Summer 2000

Moline, IL

TEACHING EXPERIENCE

CS173 Lecturer

CS Department, University of Illinois

Taught Discrete Structures, the freshman discrete mathematics course.

Spring 2008

Urbana, IL

Teaching Assistant

CS Department, University of Illinois

Teaching assistant for graduate and undergraduate sections of Combinatorial Algorithms, the senior level course on algorithm design and analysis.

Fall 2005, Spring 2006

Urbana, IL

CS273 Lecturer

CS Department, University of Illinois

Taught Introduction to Combinatorial Algorithms, a sophomore level course on discrete math and algorithms.

Summer 2003 and 2004

Urbana, IL

AWARDS AND HONORARIES

Conference Papers Invited to Journals

13th ACM Symposium on Computational Geometry (SoCG 2006) paper - invited to special issue of *Computational Geometry, Theory and Applications*

Research and Academic Honors

- NSF Graduate Research Fellowship 2002-2007
- SURGE (Support for Under-Represented Groups in Engineering) Fellowship, 2002-2007
- Chancellor's Scholar, 1998-2002
- James Scholar at UIUC, 1998-2002
- Lockheed Martin Scholarship, 2001
- Spyglass Scholarship, 1999
- National Merit Scholar, 1998
- Illinois State Scholar, 1998

PUBLICATIONS

Journal Articles

Erin Chambers, Bill Kinnersley, and Noah Prince. Mobile Eternal Security in Graphs. Submitted to *SIAM Journal on Discrete Mathematics*.

Erin Chambers, Bill Kinnersley, Noah Prince, and Douglas West. Extremal Problems for Roman Domination. Submitted to *SIAM Journal on Discrete Mathematics*.

Erin Chambers, Éric Colin de Verdière, Jeff Erickson, Francis Lazarus, and Kim Whittlesey. Splitting (Complicated) Surfaces is Hard. To appear in *Computational Geometry Theory and Applications*.

David Bunde, Erin Chambers, Dan Cranston, Kevin Milans, and Douglas West. Pebbling and Optimal Pebbling in Graphs. To appear in *Journal of Graph Theory*.

Refereed Conference Papers

Erin Chambers, Jeff Erickson, and Pratik Worah. Testing Contractibility in Planar Rips Complexes. Submitted to SoCG 2008.

Erin Chambers, Éric Colin de Verdière, Jeff Erickson, Sylvain Lazard, Francis Lazarus, and Shripad Thite. Walking Your Dog in the Woods in Polynomial Time. Submitted to SoCG 2008.

Tanya Crenshaw, Erin Chambers, Heather Metcalf and Umesh Thakkar. A Case Study of Retention Practices at the University of Illinois at Urbana-Champaign. To appear in *Technical Symposium on Computer Science Education (SIGCSE)*, 2008.

Sergio Cabello and Erin Chambers. Multiple Source Shortest Paths in a Genus g Graph. In *Symposium on Discrete Algorithms*, 2007.

Erin Chambers, Éric Colin de Verdière, Jeff Erickson, Francis Lazarus, and Kim Whittlesey. Splitting (Complicated) Surfaces is Hard. In *ACM Symposium on Computational Geometry*, 2006.

Technical Reports and Preprints

Erin Chambers, Vin de Silva, Jeff Erickson, and Robert Ghrist. Rips Complexes of Planar Point Sets. Preprint, 2007. <http://arxiv.org/abs/0712.0395>.

Tanya Crenshaw, Erin Chambers, Heather Metcalf, and Umesh Thakkar. Recruitment, Preparation, Retention: A case study of computing culture at the University of Illinois at Urbana-Champaign. Technical report UIUCDCS-R-2007-2811.

In Preparation

Piotr Adamczyk, Erin Chambers, Roy Campbell, Jonathan Fineberg, and Kevin Hamilton. Communication and Artifacts in Interdisciplinary Design: A Case Study in HCI/Arts Collaboration.

ACADEMIC AND PROFESSIONAL SERVICE

- UIUC CS Department Graduate Admissions Committee member, 2004-2005
 - UIUC JETT (Java Engagement for Teacher Training) conference planning committee member, 2004
 - UIUC Undergraduate Education Study Committee, 2003-2004
 - UIUC Computer Science Student Advisory Committee, 2002-2003
 - UIUC Women in CS; President, 2001-2002; Grad VP, 2004-2008
 - UIUC Campus Library Advisory Committee, 2001-2002
 - Northern Virginia Co-op Education Association; Vice President, Summer 2001
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MENTORING ACTIVITIES

UIUC Department of Engineering Mentor Program: Participated as a graduate student mentor to several undergraduate women in CS, 2007-2008. Participated as an undergraduate mentor to two undergraduate women in CS, 2000-2001. Participated as a freshman, 1998-2000. Formal meetings occurred every other week, and informal meetings (coffee, going to see talks together, etc.) were conducted on off weeks.

UIUC Computer Science Graduate Student Organization academic advisor: Volunteered (2-5 hours per semester, Fall 2004 and 2005) to meet with first year graduate students in order to advise them on classes, advisors, etc.

UIUC CS department undergraduate academic advisor: Paid part time position to serve as a part time academic advisor (approx. 5 hours per week, 2-3 weeks per semester) in 2002, 2003, and 2004.

UIUC Student ACM Academic Advisor: Volunteered (2-5 hours per semester, Fall and Spring 2002, Fall 2003) to meet with undergraduates to advise them on classes and undergraduate research opportunities.

UIUC Honors Program student mentor: Mentored two undergraduates in computer science during fall 1999.

SELECTED PRESENTATIONS

Workshop presentation, “Walking Your Dog in the Woods in Polynomial Time”. Midwest Theory Day, University of Chicago, Chicago, IL, November 2007.

Workshop presentation, “Testing Contractibility in Planar Rips Complexes”. 2007 Fall Workshop on Computational Geometry, November 2007.

Invited Talk, “Finding Short yet Interesting Cycles in Combinatorial Surfaces”. Knox College, October 2007.

Invited Talk, “Diversity in Computing”, A 1-hour radio program for *WEFT 90.1fm Community Radio*. Champaign, IL, July 2007.

“Recruitment, preparation, and retention.” Presentation to the Department of Computer Science Committee on Teaching and Evaluation. University of Illinois at Urbana-Champaign, August 2006.

Conference presentation, “Splitting (Complicated) Surfaces is Hard”. 22nd ACM Symposium on Computational Geometry, June 2006.

Workshop Presentation, “Splitting (Complicated) Surfaces is Hard”. Midwest Theory Day, Indiana University, Bloomington, IN, May 2006.

REFERENCES

Jeff Erickson
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Nina Amenta
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