

# JONATHAN WELLONS

## CONTACT INFORMATION

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## RESEARCH INTERESTS

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Wireless Networks, Traffic Engineering, Routing Algorithms, Optimization

## EDUCATION

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<i>Aug 2006 – Present</i>	<i>Vanderbilt University</i>	<i>Nashville, TN</i>
Ph.D. in Computer Science (Expected Graduation: Spring 2010)		
<i>Aug 2000 – May 2004</i>	<i>Grinnell College</i>	<i>Grinnell, IA</i>
B.A. in Computer Science with Honors		

## EMPLOYMENT

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<i>Aug 2004 – Aug 2006</i>	<i>O'Reilly Media Inc.</i>	<i>Sebastopol, CA</i>
Software Engineer: Web Publishing Architecture and Database Integrity		

## RESEARCH EXPERIENCE

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<i>May 2007 – Present</i>	<i>Research Assistant</i>	<i>Vanderbilt University</i>
Advisor: Dr. Yuan Xue		
■ Robust Routing Algorithms for Wireless Networks: Developed an oblivious algorithm to provide provable bounds on worst-case performance in wireless mesh network routing. Designed traffic uncertainty metrics to guide an adaptive algorithm.		
<i>May 2003 – Aug 2003</i>	<i>Research Assistant</i>	<i>Grinnell College</i>
Advisor: Dr. Charles Jepsen		
■ Tiling with Consecutive Rectangles: Developed a novel data structure and an efficient algorithm to search for finite tilings.		

## TEACHING EXPERIENCE

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<i>Aug 2006 – May 2007</i>	<i>Teaching Assistant</i>	<i>Vanderbilt University</i>
■ CS250: Algorithms ■ CS212: Discrete Structures		
<i>Aug 2002 – May 2004</i>	<i>User Consultant Trainer</i>	<i>Grinnell College</i>
■ Trained helpdesk and computer assistants on all aspects of college computer use		

## PUBLICATIONS

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1. Shanshan Jiang, Yuan Xue, and Jonathan Wellons, "Quantitative Measurement of Routing Restoration Strategies for Multi-hop Wireless Networks", in *Proc. of Wimesh 2009*, Rome, Italy (June

2009)

- Jonathan Wellons, Liang Dai, Yuan Xue and Yi Cui, "Augmenting Predictive with Oblivious Routing for Wireless Mesh Networks Under Traffic Uncertainty", for *Computer Networks: Special Issue on Multi-Hop Wireless Access Networks*, eds. Raouf Boutaba, Seán Murphy, Albert Banchs (2009)
- Jonathan Wellons, Liang Dai, Bin Chang and Yuan Xue, "Wireless Mesh Network Routing Under Uncertain Demands", Contributed Chapter in *Handbook of Wireless Mesh Networks*, ed. Sudip Misra (Springer 2009)
- Jonathan Wellons, Liang Dai, Yi Cui and Yuan Xue, "Predictive or Oblivious: A Comparative Study of Routing Strategies for Wireless Mesh Networks Under Uncertain Demand", in *The Fifth Annual IEEE Communications Society Conference on Sensor, Mesh, and Ad Hoc Communications and Networks*, San Francisco, CA, June 2008 (21% acceptance rate)
- Jonathan Wellons and Yuan Xue, "Oblivious Routing for Wireless Mesh Networks", in *IEEE International Conference on Communications (ICC)*, Beijing, China, May 2008 (36% acceptance rate)
- Jonathan Wellons and John Wisneski, "DAUTI: Automated Universal Traffic Introspector", Extended Abstract, *International Lisp Conference with ACM SIGPLAN*, Cambridge, UK, May 2007

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#### HONORS AND AWARDS

- INRIA Research Assistant (Summer 2009)
- AFCEA Fellow (Spring 2009)
- Linn Smith Prize for Excellence in Mathematics, Grinnell College, 2004
- Putnam Mathematical Competition, ranked 180th among the 3615 contestants (2003), top participant (2002, 2000)
- Iowa Collegiate Mathematics Competition, First place (2002, 2003)

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#### INVITED TALKS

- Closing Keynote Address, "How Big Can You Think?" *The 2008 Mathematics Symposium at Western Kentucky University*, Oct 31 - Nov 1, 2008, Bowling Green, KY

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#### SERVICE

<i>May 2009 – May 2010</i> Graduate Student Council, President	<i>Vanderbilt University</i>	<i>Nashville, TN</i>
<i>May 2008 – May 2009</i> Graduate Student Honor Council, President	<i>Vanderbilt University</i>	<i>Nashville, TN</i>
<i>May 2007 – Present</i> Reviewed papers for WiMAN 2007, GLOBECOM 2007, Computer Network Special Issue on Wireless Mesh Networks, INFOCOM 2009, IJDSN 2009, ICCCN 2009, Trans. on Networking	<i>Vanderbilt University</i>	<i>Nashville, TN</i>
<i>May 2003 – May 2004</i> Mathematics and Computer Science Student Educational Policy Committee, Chair	<i>Grinnell College</i>	<i>Grinnell, IA</i>
<i>May 2002 – May 2004</i> Student Academic Computing Committee, Chair	<i>Grinnell College</i>	<i>Grinnell, IA</i>

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#### TECHNICAL SKILLS

Platforms: Unix, Windows, Macintosh

Languages: C++, C, Perl, PHP, Lisp, MySQL, Bash, Javascript, Java, Haskell, Ruby, Postscript, Python

Expertise: Algorithms, Software Development, Web Publishing