

Christine W Chung

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EDUCATION

Cornell University, College of Arts and Sciences, Ithaca, NY
Bachelor of Arts Degree in Computer Science, May 1999

Cornell University, College of Engineering, Ithaca, NY
Master of Engineering Degree in Computer Science, 2000

Teachers College, Columbia University, New York, NY
Master of Arts Degree in Mathematics Education, 2003

University of Pittsburgh, Pittsburgh, PA
PhD in Computer Science, 2009
Evolutionary Solutions and Internet Applications for Algorithmic Game Theory

RESEARCH INTERESTS

Algorithm Design and Analysis (Online Algorithms, Scheduling Algorithms,
Matching Algorithms), Algorithmic Game Theory

PROFESSIONAL EXPERIENCE

Connecticut College, New London, CT
June 2009 – present
Jean C Tempel Assistant Professor of Computer Science

University of Pittsburgh, Pittsburgh, PA
August 2005 – May 2009
*Graduate Student Researcher; Teaching Assistant for Operating Systems, Algorithms
Implementation, Undergraduate Algorithms, Graduate Algorithms, Theory of Computation;
co-Instructor for Algorithmic Game Theory*

Clarkstown South High School, West Nyack, NY
August 2003 – June 2005
Computer Science and Mathematics Teacher

Stuyvesant High School, New York, NY
Jan 2003 – May 2003
Student Teacher for Computer Science, Mathematics

Marist College and
Dutchess County Community College, Poughkeepsie, NY
Jan 2002 – August 2002
Adjunct Lecturer in Statistics, Intro to Programming

SporTVision, New York, NY
May 2001 – Dec 2001
Lead Operator. Traveled each week with *ESPN Sunday Night Baseball* to implement
and integrate the Emmy-winning *K-Zone* effect system for each show.

Kraft Kennedy & Lesser, New York, NY

September 2000 – May 2001

Consultant/Programmer. Worked in project teams to design, implement/ integrate and support computer networks for top law firms and companies.

Cornell University, Ithaca, NY

September 1999 – May 2000

Teaching Assistant for Intro to Computer Science, Discrete Structures

Lucent Technologies, Bell Labs, Murray Hill, NJ

Summer 1998

Researcher. Worked with the hardware verification group in the Computing Sciences Research department examining the differences between branching and linear model checking, and comparing Computational Tree Logic expressions with formulae expressed with ω -automata.

REFEREED PUBLICATIONS

Note:

authors are listed in alphabetical order, per convention in my area of research

* indicates a student co-author

1. Serve or skip: the power of rejection in online bottleneck matching, with Barbara Anthony. To appear in *Journal of Combinatorial Optimization*. [Earlier version appeared in *The 8th Annual International Conference on Combinatorial Optimization and Applications (COCOA)*. Maui, Hawaii, December 2014.]
2. * Fairness in employee scheduling, with Erica Stockwell-Alpert '14. *Multidisciplinary International Scheduling Conference: Theory and Applications (MISTA)*. Prague, Czech Republic, August 2015.
3. Competitive cost-savings in data stream management systems, with Shenoda Guirguis and Anastasia Kurdia. *The 20th International Computing and Combinatorics Conference (COCOON)*. Atlanta, Georgia, August 2014.
4. Online bottleneck matching, with Barbara Anthony. *Journal of Combinatorial Optimization*, Volume 27, Issue 1, pp. 100-114, January 2014. [Published online: Feb 2013. Earlier version appeared in *The 6th International Conference on Combinatorial Optimization and Applications (COCOA)*. Banff, Canada, August 2012.]
5. Data plan throttling: a simple consumer choice mechanism, with Barbara Anthony. In *Proceedings of the IEEE Global Communications Conference (GLOBECOM)*, pp. 3173-3178. Atlanta, Georgia, December 2013.
6. Auction-based admission control for continuous queries in a multi-tenant DSMS, with Lory Al Moakar, Panos Chrysanthis, Shenoda Guirguis, Alexandros Labrinidis, Panayiotis Neophytou, and Kirk Pruhs. *International Journal of Next-Generation Computing*, Vol 3, No 3, November 2012.
7. * Completion Time Scheduling and the WSRPT Algorithm, with Bo Xiong '13. *International Symposium on Combinatorial Optimization (ISCO) 2012*. Athens, Greece, May 2012.
8. The power of fair pricing mechanisms, with Katrina Ligett, Aaron Roth, and Kirk Pruhs. *Algorithmica*, 63(3): 634-644 (2012). [Earlier version appeared in the *Proceedings of Latin American Theoretical Informatics Symposium (LATIN) 2010*. Oaxaca, Mexico, April 2010.]
9. Expanding CS1: applications across the liberal arts, with Bridget Baird. Consortium of Computing Sciences in Colleges, Northeast Region (CCSCNE).

- Hartford, Connecticut, April 2010.
10. Admission control mechanisms for continuous queries in the cloud, with Lory Al Moakar, Panos Chrysanthis, Shenoda Guirguis, Alexandros Labrinidis, Panayiotis Neophytou and Kirk Pruhs. *IEEE International Conference on Data Engineering (ICDE)* 2010. Long Beach, California, March 2010.
 11. SRPT is 1.86-competitive for completion time scheduling, with Tim Nonner and Alex Souza. *ACM-SLAM Symposium on Discrete Algorithms (SODA)* 2010. Austin, Texas, January 2010.
 12. Stochastic stability in internet router congestion games, with Evangelia Pyrga. *Symposium on Algorithmic Game Theory (SAGT)* 2009. Paphos, Cyprus, October 2009.
 13. On the price of stability for undirected network design, with Giorgos Christodoulou, Katrina Ligett, Evangelia Pyrga, and Rob van Stee. *Workshop on Approximation and Online Algorithms (WAOA)* 2009. Copenhagen, Denmark, September 2009.
 14. The price of stochastic anarchy, with Katrina Ligett, Kirk Pruhs and Aaron Roth. *Symposium on Algorithmic Game Theory (SAGT)* 2008. Paderborn, Germany, April 2008.
 15. The online transportation problem: on the exponential boost of one extra server, with Kirk Pruhs and Patchrawat Uthaisombut. *Latin American Theoretical Informatics Symposium (LATIN)* 2008. Búzios, Brazil, April 2008.

OTHER WORKS

*The impact of algorithmic trading in a simulated asset market. Timothy Walsh '12, Bo Xiong '13, and Purba Mukerji. International Conference of Computing in Economics and Finance (CEF) 2012. Prague, Czech Republic, June 2012.

FormalCheck Query Language Compared with CTL. Zijiang Yang, Christine Chung, and In-Ho Moon. Bell Labs (Lucent Technologies) white paper, 1999. Indexed at: <http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.44.302>.

TALKS

- The Power of Rejection in Online Bottleneck Matching. The 8th Annual International Conference on Combinatorial Optimization and Applications (COCOA). Maui, Hawaii, December 2014.
- Competitive cost-savings in data stream management systems. The 20th International Computing and Combinatorics Conference (COCOON). Atlanta, Georgia, August 2014.
- Algorithms, in *Context*. The endowed chair lecture series at Connecticut College, New London, Connecticut, April 2013.
- Trends in CS enrollment at small, liberal arts institutions. Birds-of-a-Feather Discussant at the 44th ACM Technical Symposium on Computer Science Education (SIGCSE), Denver, CO, March 2013.
- Expanding CS1: applications across the liberal arts (with Bridget Baird). Consortium of Computing Sciences in Colleges, Northeast Region (CCSCNE), Hartford, Connecticut, April 2010.
- Expanding student enthusiasm for, and understanding of, introductory Computer Science. Panel Discussant at CCSCNE (Consortium for Computing Sciences in Colleges, Northeast Region), Hartford, CT, April

2010.

- Stochastically stable states in load balancing and congestion games.
 - Dagstuhl Workshop on Computational Social Systems and the Internet, Dagstuhl, Germany, July 2007 (Invited by Éva Tardos).
 - Carnegie Mellon University (CMU) Theory Lunch, Pittsburgh, Pennsylvania, May 2007.
- The price of stochastic anarchy.
 - Women In Theory Workshop Poster at Princeton University, Princeton, NJ, May 2008 (Invited by Tal Rabin).
 - University of Freiburg in Freiburg, Germany, May 2008 (Invited by Susanne Albers).
 - Max Planck Institut für Informatik (MPII) in Saarbrücken, Germany, May 2008 (Invited by Rob Van Stee).
 - Symposium on Algorithmic Game Theory (SAGT) in Paderborn, Germany, May 2008.

GRANTS

External

- 2015 Booth Ferris Foundation grant of \$200,000 for a joint proposal with Gary Parker. *The Science Leaders II Program in Computer Science at Connecticut College*. This two-year project aims to increase the number of students from underrepresented groups graduating with a CS major.
- 2014 AAC&U PKAL TIDES (Teaching to Increase Diversity and Equity in STEM) grant of \$34,278 for a joint proposal with Gary Parker and Chad Jones. *Improving Computing Competency and Increasing the Number of Underrepresented CS Students through Science-Informatics*. Among the 19 proposals awarded full or partial grants out of about 200 applicants.

Internal

- 2013 “Research Matters” grant awarded from the Dean of the Faculty for a joint proposal with CS student Amanda Crawford, ’14: *A Mobile Application to Teach Programming to Middle School Girls using Culturally Responsive Instructional Methods*.
- 2012 “Research Matters” grant awarded from the Dean of the Faculty for a joint proposal with Anthony Graesch (Anthropology Department): *Decolonizing Heritage Management with Open-Source Augmented Reality Walking Tours*
- 2011 “Research Matters” grant from the Dean of the Faculty for a joint proposal with Purba Mukerji (Econ Department): *The Market Impact of Algorithmic Trading*.

OTHER AWARDS

2008 Taulbee Award for Excellence in Computer Science (given annually to one graduate student in the University of Pittsburgh CS Department for evidence of outstanding teaching skills, strong research interests, and a marked interest in pursuing an academic career)

2001 National Sports *Emmy Award* – The George Wensel Innovative Technical Achievement Award for “K-Zone” on ESPN Sunday Night Baseball.

**PROFESSIONAL
ACTIVITIES**

National Science Foundation (NSF) grant review panelist: Computer & Information Science & Engineering (CISE) directorate, Computing and Communication Foundations (CCF) division, Algorithmic Foundations (AF) program. Arlington, VA, April 2015.

Reviewer for Conferences

IEEE Symposium on Foundations of Computer Science (FOCS)
The ACM-SIAM Symposium on Discrete Algorithms (SODA)
Workshop for Approximation and Online Algorithms (WAOA)

Reviewer for Journals

Transactions on Economics and Computation (ACM)
Algorithmica (Springer)
Computer Communications (Elsevier)
European Journal of Operational Research (Elsevier)
International Journal of Computer Mathematics (Taylor & Francis)
Journal of Computing (INFORMS)
Journal of Scheduling (Springer)
Operations Research (INFORMS)
Theoretical Computer Science (Elsevier)

Reviewer for Textbook Publishers

John Wiley & Sons
Pearson Addison-Wesley

Member

Institute of Electrical and Electronics Engineers (IEEE)
Association of Computing Machinery (ACM)
Association of Computing Machinery Special Interest Group on Algorithms and Computation Theory (ACM SIGACT)
Association of Computing Machinery Special Interest Group on Electronic Commerce (ACM SIGecom)