

# Christine Chung

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## Education

Cornell University, Ithaca, NY	Computer Science	B.A. 1999
Cornell University, Ithaca, NY	Computer Science	M.Eng. 2000
Teachers College, Columbia University, New York, NY	Mathematics Education	M.A. 2003
University of Pittsburgh, Pittsburgh, PA	Computer Science	Ph.D. 2009

## Professional Experience

Associate Professor	2016-present
Jean C Tempel Assistant Professor	2009-2016
<i>Dept of Computer Science, Connecticut College, New London, CT</i>	
Graduate Student Researcher	August 2007-May 2009
Teaching Assistant	August 2005-May 2007
<i>Dept of Computer Science, University of Pittsburgh, Pittsburgh, PA</i>	
Mathematics and Computer Science Teacher	July 2003- June 2005
Clarkstown South High School, West Nyack, NY	
Student Teacher (Computer Science and Mathematics)	Jan 2003-May 2003
Stuyvesant High School, New York, NY	
ESPN Sunday Night Baseball <i>K-Zone</i> System Lead Operator	2001-2002
Sportvision, New York, NY	
Technical Consultant, Programmer	2000-2001
Kraft and Kennedy, New York, NY	
Teaching Assistant	September 1999-May 2000
Cornell University, Ithaca, NY	
Summer Researcher	Summer 1998
Bell Labs, Murray Hill, NJ	

## Journal Publications

authors alphabetically listed

1. BARBARA ANTHONY, CHRISTINE CHUNG, ANANYA DAS, AND DAVID YUEN. Maximizing the Number of Rides Served for Time-Limited Dial-a-Ride. *Optimization Methods and Software*, Taylor & Francis, May 2024.  
Earlier version appeared in the proceedings of the *20th International Conference on Mathematical Optimization Theory and Operations Research (MOTOR 2021)*, LNCS, vol 12755, Springer 2021.
2. CHRISTINE CHUNG, ANANYA DAS, \*NICHOLAS JACZKO, \*TIANZHI LI, \*SCOTT WESTVOLD, \*XINYUE XU, AND DAVID YUEN. Improved Bounds for Revenue Maximization in Time-Limited Dial-a-Ride. *Operations Research Forum*, Springer Nature, July 2021.  
Earlier version appeared in the *31st International Workshop on Combinatorial Algorithms (IWoca 2020)*. LNCS, vol 12126, Springer 2020.

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3. BARBARA ANTHONY AND CHRISTINE CHUNG. Equilibria in Doodle polls under three tie-breaking rules. *Theoretical Computer Science, Volume 822, 2020, Pages 61-71*.
  4. ANANYA DAS CHRISTMAN, CHRISTINE CHUNG, \*NICHOLAS JACZKO, \*SCOTT WESTVOLD, AND DAVID YUEN. Robustly Assigning Unstable Items. *Journal of Combinatorial Optimization*, January 2020.  
Earlier version appeared in the *12th Annual International Conference on Combinatorial Optimization and Applications (COCOA 2018)*. LNCS, vol 11346, Springer 2018.
  5. BARBARA ANTHONY AND CHRISTINE CHUNG. Serve or Skip: the Power of Rejection in Online Bottleneck Matching. *Journal of Combinatorial Optimization*, 32(4), 1232-1253. November 2016.
  6. BARBARA ANTHONY AND CHRISTINE CHUNG. Online Bottleneck Matching. *Journal of Combinatorial Optimization*, December 2012.
  7. CHRISTINE CHUNG, KATRINA LIGETT, KIRK PRUHS AND AARON ROTH. The Power of Fair Pricing Mechanisms. *Algorithmica*, 63(3):634-644, 2012.
  8. LORY AL MOAKAR, PANOS CHRYSANTHIS, CHRISTINE CHUNG, SHENODA GUIRGUIS, ALEXANDROS LABRINIDIS, PANAYIOTIS NEOPHYTOU, AND KIRK PRUHS. Auction-based admission control for continuous queries in a multi-tenant DSMS. *International Journal of Next-Generation Computing*, Vol 3, No 3, November 2012.

## Refereed Conference Publications

\*undergraduate student co-author

1. BARBARA ANTHONY, CHRISTINE CHUNG, ANANYA DAS, AND DAVID YUEN. Earliest Deadline First is a 2-approximation for DARP with Time Windows. *17th International Conference on Combinatorial Optimization and Applications (COCOA 2023)*. LNCS, vol 14462, Springer 2023.
2. BARBARA ANTHONY, ANANYA CHRISTMAN, CHRISTINE CHUNG, \*SARA BOYD, \*RICKY BIRNBAUM, \*JIGAR DHIMAR, \*PATRICK DAVIS, AND DAVID YUEN. Maximizing the number of rides served for Dial-a-Ride. In *Proceedings of Workshop on Algorithmic Approaches for Transportation Modeling, Optimization, and Systems (ATMOS)*, September 2019.
3. BARBARA ANTHONY AND CHRISTINE CHUNG. Inefficiency of Equilibria in Doodle Polls. *12th Annual International Conference on Combinatorial Optimization and Applications (COCOA 2018)*. LNCS, vol 11346, Springer 2018.
4. BARBARA ANTHONY AND CHRISTINE CHUNG. How Bad is Selfish Doodle Voting? Extended abstract in *Proceedings of the 17th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2018)*. Stockholm, Sweden, pp. 1856-1858, July 10-15, 2018.
5. ANANYA DAS CHRISTMAN, CHRISTINE CHUNG, \*NICHOLAS JACZKO, \*MARINA MILAN, \*ANNA VASILCHENKO, \*SCOTT WESTVOLD. Revenue Maximization in Online Dial-a-ride. In *Proceedings of the Workshop on Algorithmic Approaches for Transportation Modeling, Optimization, and Systems (ATMOS)*, September 2017.

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6. \*DANYA ALRAWI, BARBARA ANTHONY, AND CHRISTINE CHUNG. How well do Doodle polls do? *8th International Conference on Social Informatics (SocInfo 2016)*, LNCS vol 10046, Springer 2016.
  7. BARBARA ANTHONY AND CHRISTINE CHUNG. The power of rejection in online bottleneck matching. *The 8th Annual International Conference on Combinatorial Optimization and Applications (COCOA 2014)*. LNCS vol 8881, Springer 2014.
  8. CHRISTINE CHUNG, SHENODA GUIRGUIS, AND ANASTASIA KURDIA. Competitive cost-savings in data stream management systems. In *Proceedings of the 20th International Computing and Combinatorics Conference (COCOON 2014)*. LNCS vol 8591, Springer 2014.
  9. BARBARA ANTHONY AND CHRISTINE CHUNG. Data plan throttling: a simple consumer choice mechanism. In *Proc. IEEE Global Communications Conference (GLOBECOM 2013)*.
  10. BARBARA M. ANTHONY, LISA BENDER, CHRISTINE CHUNG, MARK LEWIS. Trends in CS enrollment at small, liberal arts institutions (abstract only). *The 44th ACM Technical Symposium on Computer Science Education (SIGCSE 2013)*.
  11. BARBARA ANTHONY AND CHRISTINE CHUNG. Online bottleneck matching. *Proc. 6th Annual Conference on Combinatorial Optimization and Applications (COCOA 2012)*. LNCS vol 7402, Springer 2012.
  12. \*BO XIONG AND CHRISTINE CHUNG. Completion time scheduling and the WSRPT algorithm. *Proc. 1st International Symposium on Combinatorial Optimization (ISCO 2012)* LNCS vol 7422, Springer 2012.
  13. CHRISTINE CHUNG, KATRINA LIGETT, KIRK PRUHS AND AARON ROTH. The Power of Fair Pricing Mechanisms. *9th Latin American Symposium on Theoretical Informatics (LATIN 2010)*. LNCS vol 6034, Springer 2012.
  14. BRIDGET BAIRD AND CHRISTINE CHUNG. Expanding CS1: applications across the liberal arts. *Journal of Computing Sciences in Colleges*, 25(6), 47-54. (CCSCNE 2010).
  15. CHRISTINE CHUNG, TIM NONNER, AND ALEX SOUZA. SRPT is 1.86-competitive for completion time scheduling. In *Proc. 21st ACM-SIAM Symposium on Discrete Algorithms (SODA 2010)*.
  16. LORY AL MOAKAR, PANOS CHRYSANTHIS, CHRISTINE CHUNG, SHENODA GUIRGUIS, ALEXANDROS LABRINIDIS, PANAYIOTIS NEOPHYTOU, AND KIRK PRUHS. Admission control mechanisms for continuous queries in the cloud. In *Proc. 26th IEEE International Conference on Data Engineering (ICDE 2010)*.
  17. CHRISTINE CHUNG AND EVANGELIA PYRGA. Stochastic stability in internet router congestion games. In *Proc. 2nd International Symposium on Algorithmic Game Theory (SAGT 2009)*. LNCS vol 5814, Springer 2009.
  18. CHRISTINE CHUNG, GIORGOS CHRISTODOULOU, KATRINA LIGETT, EVANGELIA PYRGA, AND ROB VAN STEE. On the price of stability for undirected network design. In *Proc. 7th Workshop on Approximation and Online Algorithms (WAOA 2009)*. LNCS vol 5893, Springer 2009.

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19. CHRISTINE CHUNG, KATRINA LIGETT, KIRK PRUHS AND AARON ROTH. The price of stochastic anarchy. *Proc. 1st International Symposium on Algorithmic Game Theory (SAGT 2008)* LNCS vol 4997, Springer 2008.
  20. CHRISTINE CHUNG, KIRK PRUHS AND PATCHRAWAT UTHAISOMBUT. The online transportation problem: on the exponential boost of one extra server. In *Proc. 8th Annual Latin American Theoretical Informatics Symposium (LATIN 2008)*. LNCS vol 4957, Springer 2008.

## Other Works

- The Impact of Algorithmic Trading in a Simulated Asset Market. P Mukerji, C Chung, \*T Walsh, \*B Xiong. *Journal of Risk and Financial Management* 12 (2), 68, 2019.  
Earlier version appeared in *International Conference of Computing in Economics and Finance (CEF 2012)*. Prague, Czech Republic, June 2012.
- FormalCheck Query Language Compared with Computational $\lambda$  Tree Logic. Zijiang Yang, Christine Chung, and In-Ho Moon. Bell Labs (Lucent Technologies), white paper. Murray Hill, NJ, 1999.

## Talks, Presentations, Interviews

- Earliest Deadline First is a 2-approximation for DARP with Time Windows. Paper presentation at the 17th International Conference on Combinatorial Optimization and Applications (COCOA 2023). Honolulu, Hawaii, December 2023.
- Maximizing the Number of Rides Served for Time-Limited Dial-a-Ride. Paper presentation (given remotely) at the 20th International Conference on Mathematical Optimization Theory and Operations Research (MOTOR 2021). Irkutsk, Russia, July 2021.
- NPR interview. "Algorithms: the DNA to our Digital Data," Connecticut Public Radio. By Patrick Skahill and Carmen Baskauf. Published August 9, 2019.  
<https://www.wnpr.org/post/algorithms-dna-our-digital-data>.
- How Bad is Selfish Doodle Voting? Poster presentation at the 17th International Conference on Autonomous Agents and Multiagent Systems (AAMAS). Stockholm, Sweden, July 2018.
- How well do Doodle polls do? Paper presentation at the 8th International Conference on Social Informatics (SocInfo). Bellevue, Washington, November 2016.
- The Power of Rejection in Online Bottleneck Matching. Paper presentation at the 8th Annual International Conference on Combinatorial Optimization and Applications (COCOA). Maui, Hawaii, December 2014.
- Competitive cost-savings in data stream management systems. Paper presentation at the 20th International Computing and Combinatorics Conference (COCOON). Atlanta, Georgia, August 2014.
- Algorithms, in *Conntext*. The endowed chair lecture series at Connecticut College, New London, Connecticut, April 2013.

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- 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).
    - Paper presentation at University of Freiburg in Freiburg, Germany, May 2008 (Invited by Susanne Albers).
    - Paper presentation at Max Planck Institut für Informatik (MPII) in Saarbrücken, Germany, May 2008 (Invited by Rob Van Stee).
    - Paper presentation at Symposium on Algorithmic Game Theory (SAGT) in Paderborn, Germany, May 2008.

## Teaching, Advising, and Service to Connecticut College

- Courses taught (two or three of these every semester):
  - COM110 Intro to Computer Science and Problem Solving
  - COM212 Data Structures
  - COM304 Design and Analysis of Algorithms
  - COM313 Algorithmic Game Theory
  - COM323/MAT323 Theory of Computation
  - COM495/6 Research Seminar
- Academic adviser to dozens of undergraduate CS majors each semester
- Past undergraduate CS research students (each advised for an average of two semesters of CS research)
  - Tim Walsh '12, Bo Xiong '13, Evan Gray '13, Peter Glennon '13, Jennifer Blagg '13, Mert Mihei '14, Talha Mohsin '14, Shiva Lingala '14, Junhee Lee '14, Amit Kinha '14, Amanda Crawford '14, Erica Stockwell-Alpert '14, Dillon Kerr '15, Lillie Schachter '15, Ari Brenner '15, Julia Proft '16, Virginia Gresham '17, Rodrigo Rogel-Perez '17, Tyler Wood '17, Max Bender

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'16, Danya Al-Rawi '16, Tim Palmer '17, George Sarkar '17, Tom Conlin '16, Khanh Nghiem '18, Asaf Davidov '17, Marina Milan '17, Gabe Ryan '17, Jason Karos '18, Nate Devine '18, Samuel Barnes '18, Jigar Dhimar '18, Ricky Birnbaum '18, Nick Buly '18, Adham Khalifa '22, Steven Nieves '22, Linda He '21, Anna Jeffers '20, Lauren Helm '20, Michael Riley '20, Sindy Du '20, Sean King '20, Chelsea Vickers '21, Colby Rees '21, Justin Turbeville '21, Jay Yunas '22, Jake Corcoran '22, Linh Luu '22, Kevin Ventura Quijada '22, Md Jawad '22, Eric Huber '22, Wenjie Wang '23, Brian MacSweeney '23, Minh Nguyen '23, Faiz Aladin '24, Milo Lynch '24, Auden Woolfson '24, Bill Tran '24, Michelle Le '25, Chloe Nguyen '25, Krishh Tipnis '25, John Asaro '26, An Tran '25, Leo Claney '26, Kate Vento '27

- Select Service to Connecticut College

Co-Chair of the Computer Science Department. Fall 2023 - present.

Co-Chair of the search committee to interview and select the Conn College Vice President for Information Services. Spring 2023.

Faculty Mentoring Fellow for the Dean of Faculty. Spring 2022 - Spring 2024.

Elected Faculty Ombudsperson. Fall 2019 - Spring 2022.

Elected member of the Committee on Appointments Promotions and Tenure (CAPT). Fall 2020 - Spring 2023.

Member (and interim chair) of the Information Services Committee. Fall 2010 - Spring 2013 and Fall 2017 - Spring 2020.

Served as a “Modes of Inquiry” (Quantitative and Formal Reasoning) consultant for administering our new General Education requirements. Fall 2017 - Spring 2020.

Member of the Strategic Plan Implementation Task Force. June 2016 - October 2016.

“Connections” (Conn College General Education program) Entrepreneurship Pathway. Fall 2016. Served as co-faculty coordinator for the new Entrepreneurship Pathway. Held a Pathway design retreat to kick off the pathway proposal and application process. Attended the weekly Pathway Coordinators seminar.

Elected member of the Educational Planning Committee (EPC). Fall 2014 - Fall 2016. This term was during our overhaul of our General Education program and the inception of our new GE (*Connections*) program

Interim member of the Committee on Faculty Compensation (CFC). Fall 2016

Member of the Inclusive Excellence working group. Fall 2015.

Member of the Modes of Inquiry working group. Fall 2015.

## Awards and Honors

- 2023, 2019, 2018, 2017. Nominated by colleagues for the annually-awarded John S. King Memorial Teaching Award.
- 2017 John S. King Excellence in Teaching Award (a different award from the one I was nominated for above) given by the Connecticut College Student Government Association (SGA) to a faculty member who has “shown an extraordinary commitment to students both inside and outside the classroom.” According to SGA bylaws, the award is not to be given annually, and “should not be presented so often that it will lose its significance.”

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- 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 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.
  - Multiple “Research Matters” grants awarded from the Dean of the Faculty Office at Connecticut College, usually requested for research being pursued with a CS student; roughly one award every other year.
  - 2013 Nominated by a colleague for the Helen Mulvey Teaching Award.
  - 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 being lead operator during the inaugural season of K-Zone (a real-time graphical animation of the strike zone during weekly Major League Baseball television broadcasts) on *ESPN Sunday Night Baseball*.

## Professional Activities

- Session Chair
  - International Computing and Combinatorics Conference (COCOON)
  - International Conference on Combinatorial Optimization and Applications (COCOA)
- 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
  - Transport Policy (Elsevier)
  - 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)

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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)

ACM Special Interest Group on Algorithms and Computation Theory (ACM SIGACT)

ACM Special Interest Group on Electronic Commerce (ACM SIGecom)

- NSF grant review panel member on Optimization and Approximation, in the Division of Computing and Communication Foundations (CCF) within the Directorate for Computer and Information Science and Engineering (CISE), at the NSF offices in Arlington, VA, April 2015.