# Ziv Scully's Curriculum Vitae

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## **Academic Appointments**

**Cornell University**, Assistant Professor, ORIE **Massachusetts Institute of Technology**, Postdoctoral Fellow **Harvard University**, Postdoctoral Fellow **Simons Institute for the Theory of Computing**, Research Fellow Ithaca, NY, 2023–present Cambridge, MA, Spring 2023 Cambridge, MA, Spring 2023 Berkeley, CA, Fall 2022

#### Education

Carnegie Mellon University, PhD and MS, Computer SciencePittsburgh, PA, 2016–2022THESIS ADVISORS: Mor Harchol-Balter and Guy Blelloch.Pittsburgh, PA, 2016–2022

**Massachusetts Institute of Technology**, *BS*, *Math with Computer Science* Cambridge, MA, 2012–2016 RESEARCH MENTOR: Adam Chlipala.

#### **Brookline High School**

Brookline, MA, 2008-2012

#### **Industry Positions and Internships**

NOVID (Expii, Inc.), Algorithms ConsultantPittsburgh, PA, Winter 2020IBM Research, Research InternYorktown Heights, NY, Summer 2019Harvard Medical School, Research InternBoston, MA, Summer 2016Intentional Software Corporation, Software Developer InternBellevue, WA, Summer 2015Bridgewater Associates, Technology Associate InternWestport, CT, Summer 2014TripAdvisor, Software Engineering InternNewton, MA, Summer 2013

#### Awards

Performance 2023 Best Paper Award	November 2023
SIGMETRICS Doctoral Dissertation Award, Winner	November 2022
CMU SCS Distinguished Dissertation Award, Honorable Mention	November 2022
INFORMS George Nicholson Student Paper Competition, Winner	October 2022
SIGMETRICS 2021 Best Paper Award	June 2021
STOC 2021 TheoryFest, Featured Paper	June 2021
SIGMETRICS 2020 Best Video Award	June 2020
SIGMETRICS 2019 Kenneth C. Sevcik Outstanding Student Paper Award	June 2019
Performance 2018 Best Student Paper Award	December 2018
INFORMS Applied Probability Society Best Student Paper Prize, Finalist	November 2018
National Science Foundation Graduate Fellowship Program (NSF GRFP), Awardee	2016-2019
ARCS Foundation Scholarship	2016-2019

PLDI 2016 Student Research Competition, Undergraduate Third Place	June 2016
National Merit Scholarship Program, Finalist	February 2012
Intel Science Talent Search, Semifinalist	January 2012
Siemens Competition, Regional Semifinalist	October 2011

### Awards Won by Advised Students

**National Defense Science and Engineering Graduate (NDSEG) Fellowship**, Amit Harlev 2024–2027 **SIGMETRICS 2021 Student Research Competition**, Edwin Peng, Undergraduate Winner June 2021

#### **Publications**

- [39] George Yu and Ziv Scully. 2024. **Strongly Tail-Optimal Scheduling in the Light-Tailed M/G/1**. *Proceedings of the ACM on Measurement and Analysis of Computing Systems* 8, 2, Article 27 (June 2024), 33 pages. doi:10.1145/3656011. SIGMETRICS 2024, Venice, Italy.
- [38] Runhan Xie, Isaac Grosof, and Ziv Scully. 2024. Heavy-Traffic Optimal Size- and State-Aware Dispatching. Proceedings of the ACM on Measurement and Analysis of Computing Systems 8, 1, Article 9 (March 2024), 36 pages. doi:10.1145/3639035. SIGMETRICS 2024, Venice, Italy.
- [37] Ziv Scully and Lucas van Kreveld. 2024. When Does the Gittins Policy Have Asymptotically Optimal Response Time Tail in the M/G/1? *Operations Research* 72, 2 (Feb. 2024). doi:10.1287/opre.2022.0038.
- [36] Yige Hong and Ziv Scully. 2024. **Performance of the Gittins Policy in the G/G/1 and G/G/k**, with and without Setup Times. *Performance Evaluation* 163, Article 102377 (Jan. 2024), 26 pages. doi:10.1016/j.peva.2023.102377. Performance 2023, Chicago, IL.
  - ★ Performance 2023 Best Paper Award.
- [35] Yige Hong and Ziv Scully. 2023. Performance of the Gittins Policy in the G/G/1 and G/G/k, with and without Setup Times. *ACM SIGMETRICS Performance Evaluation Review* 51, 2 (Sept. 2023), 33–35. doi:10.1145/3626570.3626583. MAMA workshop at SIGMETRICS 2023, Orlando, FL.
- [34] Runhan Xie and Ziv Scully. 2023. Reducing Heavy-Traffic Response Time with Asymmetric Dispatching. ACM SIGMETRICS Performance Evaluation Review 51, 2 (Sept. 2023), 36–38. doi:10. 1145/3626570.3626584. MAMA workshop at SIGMETRICS 2023, Orlando, FL.
- [33] Ziv Scully. 2023. The Role of Advanced Math in Teaching Performance Modeling. ACM SIGMETRICS Performance Evaluation Review 51, 2 (Sept. 2023), 59–64. doi:10.1145/3626570.3626591.
- [32] Samuli Aalto and Ziv Scully. 2023. Minimizing the Mean Slowdown in the M/G/1 Queue. *Queueing Systems* 104, 3-4 (Aug. 2023), 187–210. doi:10.1007/s11134-023-09888-6.
- [31] Samuli Aalto and Ziv Scully. 2022. On the Gittins Index for Multistage Jobs. *Queueing Systems* 102, 3-4 (Dec. 2022), 353–371. doi:10.1007/s11134-022-09760-z.
- [30] Isaac Grosof, Ziv Scully, Mor Harchol-Balter, and Alan Scheller-Wolf. 2022. Optimal Scheduling in the Multiserver-Job Model under Heavy Traffic. Proceedings of the ACM on Measurement and Analysis of Computing Systems 6, 3, Article 51 (Dec. 2022), 32 pages. doi:10.1145/3570612. SIGMETRICS 2023, Orlando, FL.

- [29] Ziv Scully. 2022. A New Toolbox for Scheduling Theory. Ph.D. Dissertation. Carnegie Mellon University, Pittsburgh, PA. https://ziv.codes/pdf/scully-thesis.pdf.
  - ★ 2022 SIGMETRICS Doctoral Dissertation Award, winner.
  - ★ 2022 CMU SCS Distinguished Dissertation Award, honorable mention.
- [28] Mor Harchol-Balter and Ziv Scully. 2022. **The Most Common Queueing Theory Questions Asked by Computer Systems Practitioners**. *ACM SIGMETRICS Performance Evaluation Review* 49, 4 (June 2022), 3–7. doi:10.1145/3543146.3543148. TeaPACS workshop at Performance 2021, Milan, Italy (virtual).
- [27] Ziv Scully. 2022. Bounding Mean Slowdown in Multiserver Systems. ACM SIGMETRICS Performance Evaluation Review 49, 2 (Jan. 2022), 36–38. doi:10.1145/3512798.3512812. MAMA workshop at SIGMETRICS 2021, Beijing, China (virtual).
- [26] Ziv Scully, Isaac Grosof, and Michael Mitzenmacher. 2022. Uniform Bounds for Scheduling with Job Size Estimates. In 13th Innovations in Theoretical Computer Science Conference (ITCS 2022) (Leibniz International Proceedings in Informatics (LIPIcs)). Schloss Dagstuhl-Leibniz-Zentrum fuer Informatik, Berkeley, CA, Article 41, 30 pages. doi:10.4230/LIPIcs.ITCS.2022.114.
- [25] Ziv Scully and Lucas van Kreveld. 2022. When Does the Gittins Policy Have Asymptotically Optimal Response Time Tail? ACM SIGMETRICS Performance Evaluation Review 49, 2 (Jan. 2022), 18– 20. doi:10.1145/3512798.3512806. MAMA workshop at SIGMETRICS 2021, Beijing, China (virtual).
- [24] Ziv Scully and Mor Harchol-Balter. 2021. The Gittins Policy in the M/G/1 Queue. In 19th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt 2021). IFIP, Philadelphia, PA, 248–255. doi:10.23919/WiOpt52861.2021.9589051.
- [23] Ziv Scully and Mor Harchol-Balter. 2021. How to Schedule Near-Optimally under Real-World Constraints. arXiv: 2110.11579.
- [22] Isaac Grosof, Kunhe Yang, Ziv Scully, and Mor Harchol-Balter. 2021. Nudge: Stochastically Improving upon FCFS. Proceedings of the ACM on Measurement and Analysis of Computing Systems 5, 2, Article 21 (June 2021), 29 pages. doi:10.1145/3460088. SIGMETRICS 2021, Beijing, China (virtual).
  ★ SIGMETRICS 2021 Best Paper Award.
- [21] Ziv Scully, Isaac Grosof, and Mor Harchol-Balter. 2021. Optimal Multiserver Scheduling with Unknown Job Sizes in Heavy Traffic. *Performance Evaluation* 145, Article 102150 (Jan. 2021), 31 pages. doi:10.1016/j.peva.2020.102150. Performance 2020, Milan, Italy (virtual).
- [20] Ziv Scully, Isaac Grosof, and Mor Harchol-Balter. 2020. The Gittins Policy Is Nearly Optimal in the M/G/k under Extremely General Conditions. Proceedings of the ACM on Measurement and Analysis of Computing Systems 4, 3, Article 43 (Dec. 2020), 29 pages. doi:10.1145/3428328. SIGMETRICS 2021, Beijing, China (virtual).
  - ★ 2022 INFORMS George Nicholson Student Paper Competition, winner.
- [19] Ziv Scully, Isaac Grosof, and Mor Harchol-Balter. 2020. Optimal Multiserver Scheduling with Unknown Job Sizes in Heavy Traffic. ACM SIGMETRICS Performance Evaluation Review 48, 2 (Nov. 2020), 33–35. doi:10.1145/3439602.3439615. MAMA workshop at SIGMETRICS 2020, Boston, MA (virtual).
- [18] Ziv Scully, Lucas van Kreveld, Onno J. Boxma, Jan-Pieter Dorsman, and Adam Wierman. 2020. Characterizing Policies with Optimal Response Time Tails under Heavy-Tailed Job Sizes. Proceedings of the ACM on Measurement and Analysis of Computing Systems 4, 2, Article 30 (June 2020), 33 pages. doi:10.1145/3392148. SIGMETRICS 2020, Boston, MA (virtual).

- [17] Ziv Scully, Mor Harchol-Balter, and Alan Scheller-Wolf. 2020. Simple Near-Optimal Scheduling for the M/G/1. Proceedings of the ACM on Measurement and Analysis of Computing Systems 4, 1, Article 11 (March 2020), 29 pages. doi:10.1145/3379477. SIGMETRICS 2020, Boston, MA (virtual).
  - ★ SIGMETRICS 2020 Best Video Award.
- [16] Illés Antal Horváth, Ziv Scully, and Benny Van Houdt. 2019. Mean Field Analysis of Join-below-Threshold Load Balancing for Resource Sharing Servers. Proceedings of the ACM on Measurement and Analysis of Computing Systems 3, 3, Article 57 (Dec. 2019), 21 pages. doi:10.1145/3366705. SIGMETRICS 2020, Boston, MA (virtual).
- [15] Ziv Scully, Mor Harchol-Balter, and Alan Scheller-Wolf. 2019. Simple Near-Optimal Scheduling for the M/G/1. ACM SIGMETRICS Performance Evaluation Review 47, 2 (Dec. 2019), 24–26. doi: 10.1145/3374888.3374898. MAMA workshop at SIGMETRICS 2019, Phoenix, AZ.
- [14] Ziv Scully. 2019. **Open Problem–M/G/1 Scheduling with Preemption Delays**. *Stochastic Systems* 9, 3 (Sept. 2019), 311–312. doi:10.1287/stsy.2019.0047.
- [13] Naama Ben-David, Ziv Scully, and Guy E. Blelloch. 2019. Unfair Scheduling Patterns in NUMA Architectures. In 28th International Conference on Parallel Architectures and Compilation Techniques (PACT 2019). IEEE, Seattle, WA, 205–218. doi:10.1109/PACT.2019.00024.
- [12] Isaac Grosof, Ziv Scully, and Mor Harchol-Balter. 2019. Load Balancing Guardrails: Keeping Your Heavy Traffic on the Road to Low Response Times. Proceedings of the ACM on Measurement and Analysis of Computing Systems 3, 2, Article 42 (June 2019), 31 pages. doi:10.1145/3341617.3326157. SIGMETRICS 2019, Phoenix, AZ.
  - ★ SIGMETRICS 2019 Kenneth C. Sevcik Outstanding Student Paper Award.
  - ★ STOC 2021 TheoryFest, featured paper.
- [11] Anupam Gupta, Haotian Jiang, Ziv Scully, and Sahil Singla. 2019. The Markovian Price of Information. In Integer Programming and Combinatorial Optimization, 20th International Conference (IPCO 2019) (Lecture Notes in Computer Science, Vol. 11480), Andrea Lodi and Viswanath Nagarajan (Eds.). Springer, Cham, Switzerland, 233–246. doi:10.1007/978-3-030-17953-3\_18.
- [10] Isaac Grosof, Ziv Scully, and Mor Harchol-Balter. 2019. SRPT for Multiserver Systems. ACM SIGMETRICS Performance Evaluation Review 46, 2 (Jan. 2019), 9–11. doi:10.1145/3305218.3305223. MAMA workshop at SIGMETRICS 2018, Irvine, CA.
- [9] Ziv Scully, Mor Harchol-Balter, and Alan Scheller-Wolf. 2018. Optimal Scheduling and Exact Response Time Analysis for Multistage Jobs. arXiv:1805.06865.
- [8] Isaac Grosof, Ziv Scully, and Mor Harchol-Balter. 2018. SRPT for Multiserver Systems. *Performance Evaluation* 127–128 (Nov. 2018), 154–175. doi:10.1016/j.peva.2018.10.001. Performance 2018, Tolouse, France.
  - ★ Performance 2018 Best Student Paper Award.
- [7] Ziv Scully and Mor Harchol-Balter. 2018. SOAP Bubbles: Robust Scheduling under Adversarial Noise. In 56th Annual Allerton Conference on Communication, Control, and Computing. IEEE, Monticello, IL, 144–154. doi:10.1109/ALLERTON.2018.8635963.
- [6] Ziv Scully, Mor Harchol-Balter, and Alan Scheller-Wolf. 2018. SOAP: One Clean Analysis of All Age-Based Scheduling Policies. Proceedings of the ACM on Measurement and Analysis of Computing Systems 2, 1, Article 16 (March 2018), 30 pages. doi:10.1145/3179419. SIGMETRICS 2018, Irvine, CA.
  - ★ INFORMS Applied Probability Society Best Student Paper Prize, finalist.

- [5] Ziv Scully, Guy E. Blelloch, Mor Harchol-Balter, and Alan Scheller-Wolf. 2017. Optimally Scheduling Jobs with Multiple Tasks. ACM SIGMETRICS Performance Evaluation Review 45, 2 (Oct. 2017), 36–38. doi:10.1145/3152042.3152055. MAMA workshop at ACM SIGMETRICS 2017, Urbana, IL.
- [4] Ziv Scully and Adam Chlipala. 2017. A Program Optimization for Automatic Database Result Caching. In Proceedings of the 44th ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2017). ACM, Paris, France, 271–284. doi:10.1145/3009837.3009891.
- [3] Tian-Yi Jiang, Ziv Scully, and Yan X. Zhang. 2015. Motors and Impossible Firing Patterns in the Parallel Chip-Firing Game. SIAM Journal on Discrete Mathematics 29, 1 (March 2015), 615–630. doi:10.1137/130933770.
- [2] Ziv Scully, Tian-Yi Jiang, and Yan X. Zhang. 2014. Firing Patterns in the Parallel Chip-Firing Game. In 26th International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC 2014) (DMTCS Proceedings, Vol. AT), Louis J. Billera and Isabella Novik (Eds.). Discrete Mathematics and Theoretical Computer Science, Chicago, IL, 537–548. https://hal.inria.fr/hal-01207550.
- [1] Tanya Khovanova and Ziv Scully. 2013. Efficient Calculation of Determinants of Symbolic Matrices with Many Variables. arXiv:1304.4691.

# Teaching

Cornell ORIE 3510, Instructor Cornell ORIE 6500, Instructor CMU 15-920: Pilot Course on DEI Topics, Instructor CMU 15-455, Teaching Assistant CMU 15-857, Teaching Assistant MIT Educational Studies Program, AP Physics C Teacher MIT 6.01, Lab Assistant Ithaca, NY, Fall 2023 Ithaca, NY, Fall 2023 Pittsburgh, PA, Fall 2021 Pittsburgh, PA, Spring 2020 Pittsburgh, PA, Fall 2017 Cambridge, MA, 2014–2015 Cambridge, MA, Spring 2013

## **Student Advising**

Qian Xie, Cornell PhD Amit Harlev, Cornell PhD Shefali Ramakrishna, Cornell PhD George Yu, Cornell PhD Edwin Peng, CMU Undergraduate Evan Wu, CMU Undergraduate 2023–present 2023–present 2023–present 2023–present September 2019–May 2022 May–September 2020

## **Academic Service**

Cornell ORIE Colloquium, Organizer	August 2023–present
ACM EC 2024 Program Committe	January–March 2024
ACM SIGMETRICS / IFIP Performance 2024 Program Committee	August 2023–March 2024
IFIP Performance 2023 Program Committee	May–July 2023
INFORMS APS Best Student Paper Prize Committee	June–August 2023
CMU CSD Diversity, Equity, and Inclusion Committee	2021-2022
CMU Scheduling and QUeueing At LLunch (SQUALL), Organizer	2021-2022
CMU CSD Doctoral Review Committee	2018-2022

#### IFIP Performance 2021 Program Committee CMU CSD Admitted PhD Student Visit Day, Website Chair

#### Reviewing

ACM EC (PC member), ACM SIGMETRICS (PC member), ACM Transactions on Modeling and Computer Simulation, ACM Transactions on Modeling and Performance Evaluation of Computing Systems, Discrete Mathematics, EATCS ICALP, European Journal of Operational Research, FUN with Algorithms, IEEE Transactions on Parallel and Distributed Systems, IEEE/ACM Transactions on Networking, IFIP Performance (PC member), Indagationes Mathematicae, INFORMS Journal on Computing, Mathematics of Operations Research, Management Science, Omega, Operations Research, Operations Research Letters, Performance Evaluation, Queueing Systems, Stochastic Models.

# **Conference and Workshop Presentations**

Simons Institute Data-Driven Decision Processes Reunion, TALK: "Local Hedging Approximately Solves Pandora's Box Prob	, <i>Talk</i> Berkeley, CA, January 2024 lems with Optional Inspection".
<b>2023 INFORMS APS Conference</b> , <i>Invited talk</i> TALK: "Performance of the Gittins Policy in the G/G/1 and G/G/k	Nancy, France, June 2023 , With and Without Setup Times".
<b>TeaPACS at SIGMETRICS 2023</b> , <i>Invited talk</i> TALK: "The Role of Advanced Math in Teaching Performance Mo	Orlando, FL, June 2023 odeling".
LATA at SIGMETRICS 2023, <i>Invited talk</i> TALK: "Uniform Bounds for Scheduling with Job Size Estimates".	Orlando, FL, June 2023
<b>2023 Joint Mathematics Meetings</b> , <i>Invited talk</i> TALK: "How Robust Is the Gittins Policy for Queue Scheduling?"	Boston, MA, January 2023
<b>2022 INFORMS Annual Meeting</b> , <i>Invited talk</i> TALK: "The Gittins Policy is Nearly Optimal in the M/G/k under Ext George Nicholson Best Student Paper Competition award session	Indianapolis, IN, October 2022 tremely General Conditions", in INFORMS n.
EURO 2022, <i>Invited talk</i> TALK: "The Gittins Policy in the M/G/1 Queue".	Espoo, Finland, July 2022
<b>2022 CORS/INFORMS International</b> , <i>Two invited talks</i> TALK 1: "Drifting Towards Progress in Multiserver Scheduling". TALK 2: "WINE: A New Queueing Identity for Analyzing Schedu	Vancouver, BC, Canada, June 2022 ling Policies in Multiserver Systems".
<b>ITCS 2022</b> , <i>Talk</i> TALK: "Uniform Bounds for Scheduling with Job Size Estimates".	Berkeley, CA (virtual), January 2022
<b>2021 INFORMS Annual Meeting</b> , <i>Invited talk</i> TALK: "A New Queueing Identity with Applications to Multiserve	Los Angeles, CA (virtual), October 2021 er Scheduling".
<b>WiOpt 2021</b> , <i>Invited talk</i> TALK: "The Gittins Policy in the M/G/1 Queue".	Philadelphia, PA (virtual), October 2021
<b>SIGMETRICS 2021</b> , <i>Tutorial and talk</i> TUTORIAL: "Coupling Techniques for Complex Control Problems TALK: "The Gittins Policy is Nearly Optimal in the M/G/k under "	Beijing, China (virtual), June 2021 ", with Sid Banerjee. Extremely General Conditions".
MAMA at SIGMETRICS 2021, <i>Talk</i> TALK: "Bounding Mean Slowdown in Multiserver Systems".	Beijing, China (virtual), June 2021

May–July 2021 2018–2019

<b>Performance 2020</b> , <i>Talk</i> Так: "Optimal Multiserver Scheduling with Unknown Job Sizes in T	Milan, Italy (virtual), November 2020 Heavy Traffic".
<b>SIGMETRICS 2020</b> , <i>Two talks</i> TALK 1: "Simple Near-Optimal Scheduling for the M/G/1". TALK 2: "Characterizing Policies with Optimal Response Time Tails	Boston, MA (virtual), June 2020 under Heavy-Tailed Job Sizes".
<b>MAMA at SIGMETRICS 2020</b> , <i>Talk</i> Таlк: "Optimal Multiserver Scheduling with Unknown Job Sizes in I	Boston, MA (virtual), June 2020 Heavy Traffic".
<b>2019 INFORMS Annual Meeting</b> , <i>Invited talk</i> TALK: "Simple Near-Optimal Scheduling for the M/G/1".	Seattle, WA, October 2019
<b>Cornell ORIE Young Researchers Workshop 2019</b> , <i>Invited talk</i> TALK: "Simple Near-Optimal Scheduling for the M/G/1".	Ithaca, NY, October 2019
<b>PACT 2019</b> , <i>Talk</i> TALK: "Unfair Scheduling Patterns in NUMA Architectures".	Seattle, WA, September 2019
<b>SIGMETRICS 2019</b> , <i>Tutorial</i> TUTORIAL: "The Power of SOAP Scheduling", with Mor Harchol-Bal	Phoenix, AZ, June 2019 ter.
<b>MAMA at SIGMETRICS 2019</b> , <i>Talk</i> TALK: "Simple Near-Optimal Scheduling for the M/G/1".	Phoenix, AZ, June 2019
Young European Queueing Theorists 2018, <i>Invited talk</i> TALK: "Optimal Scheduling and Exact Response Time Analysis for M	Toulouse, France, December 2018 Aultistage Jobs".
2018 INFORMS Annual Meeting, <i>Three invited talks</i> TALK 1: "SOAP: One Clean Analysis of All Age-Based Scheduling Po Paper Prize award session. TALK 2: "Optimal Scheduling and Exact Response Time Analysis for TALK 3: "Open Problem—M/G/1 Scheduling with Preemption Delays" Applied Probability" session.	Phoenix, AZ, November 2018 licies", in INFORMS APS Best Student Multistage Jobs". , in INFORMS APS "Open Problems in
<b>SIGMETRICS 2018</b> , <i>Talk and poster</i> TALK: "SOAP: One Clean Analysis of All Age-Based Scheduling H Analysis of All Age-Based Scheduling Policies".	Irvine, CA, June 2018 Policies". Poster: "SOAP: One Clean
<b>IMACCS 2018</b> , <i>Poster</i> POSTER: "SOAP: One Clean Analysis of All Age-Based Scheduling Po	Columbus, OH, June 2018 olicies".
<b>2017 INFORMS Annual Meeting</b> , <i>Invited talk</i> TALK: "Optimally Scheduling Jobs with Multiple Tasks".	Houston, TX, October 2017
<b>2017 INFORMS APS Conference</b> , <i>Invited talk</i> Так: "Optimally Scheduling Jobs with Multiple Tasks".	Evanston, IL, July 2017
<b>MAMA at SIGMETRICS 2017</b> , <i>Talk</i> TALK: "Optimally Scheduling Jobs with Multiple Tasks".	Urbana, IL, June 2017
<b>POPL 2017</b> , <i>Talk</i> TALK: "A Program Optimization for Automatic Database Result Cac	Paris, France, January 2017 hing".
<b>PLDI 2016 Student Research Competition</b> , <i>Talk and poster</i> TALK: "A Program Optimization for Automatic Database Result Cacl POSTER: "A Program Optimization for Automatic Database Result Cac	Santa Barbara, CA, June 2016 hing". aching".

<b>2012 MIT PRIMES Conference</b> , <i>Talk</i> TALK: "Efficient Calculation of Determinants of Symbolic Matrice	Cambridge, MA, May 2012 s with Many Variables".
<b>2012 MAA Undergraduate Student Poster Session</b> , <i>Poster</i> POSTER: "Trees and Motors in the Parallel Chip-Firing Game".	Boston, MA, January 2012
<b>2011 MIT PRIMES Conference</b> , <i>Talk</i> TALK: "Progress on the Parallel Chip-Firing Problem".	Cambridge, MA, May 2011
Visits and Other Talks	
<b>Cornell University</b> TALK: "WINE: A New Queueing Identity for Analyzing Schedulin VENUE: CAM Colloquium.	Ithaca, NY, August 2023 g Policies in Multiserver Systems".
<b>Cornell University</b> TALK: "Local Hedging Approximately Solves Pandora's Box Probl VENUE: CS Theory Seminar.	Ithaca, NY, August 2023 ems with Optional Inspection".
<b>Stanford University</b> Host: Jann Spiess. Talk: "A New Toolbox for Scheduling Theory". VENUE: GSB OIT Seminar.	Stanford, CA, May 2023
TCS+ TALK: "Recent Progress in Queueing and Scheduling Theory (for	Virtual seminar, February 2023 a TCS Audience)".
Massachusetts Institute of Technology TALK: "Local Hedging for Combinatorial Pandora's Box Problems VENUE: Algorithms & Complexity Seminar.	Cambridge, MA, February 2023 with Optional Inspection".
Harvard University Talk: "A New Toolbox for Scheduling Theory". Venue: Systems-Theory Seminar.	Cambridge, MA, February 2023
<b>UC Berkeley</b> TALK: "Markov-Process Multi-Golf: A Gittins Index Tutorial". VENUE: Data-Driven Decision Processes Whiteboard Talk.	Berkeley, CA, August 2022
Northwestern University Host: Anton Braverman. TALK: "A New Toolbox for Scheduling Theory".	Evanston, IL, August 2022
University of Amsterdam Host: Jan-Pieter Dorsman. Talk: "A New Toolbox for Scheduling Theory". VENUE: Applied Probability Seminar.	Amsterdam, The Netherlands, July 2022
<b>Eindhoven University of Technology</b> Host: Onno Boxma. Talk: "A New Toolbox for Scheduling Theory". VENUE: SOR Seminar.	Eindhoven, The Netherlands, June 2022

<b>University of Michigan</b> Host: Eunshin Byon. TALK: "A New Toolbox for Scheduling Theory". VENUE: IOE Seminar.	Ann Arbor, MI (virtual), February 2022
<b>Cornell University</b> Host: David A. Goldberg. TALK: "A New Toolbox for Scheduling Theory". VENUE: ORIE Special Seminar.	Ithaca, NY (virtual), January 2022
University of Chicago Host: René Caldentey. TALK: "A New Toolbox for Scheduling Theory". VENUE: Workshop in Operations/Management Science.	Chicago, IL (virtual), January 2022
<b>California Institute of Technology</b> Hosts: Pietro Perona and Adam Wierman. TALK: "A New Toolbox for Scheduling Theory". VENUE: Frontiers in Computing + Mathematical Sciences Systems	Pasadena, CA (virtual), January 2022 mposium.
University of Michigan Host: Lei Ying. Talk: "How to Schedule Near-Optimally under Real-World O VENUE: CSP Seminar.	Ann Arbor, MI (virtual), September 2021 Constraints".
Cornell University Host: Sid Banerjee.	Ithaca, NY, July–August 2021
<b>Stanford University</b> Host: Balaji Prabhakar. TALK: "The Gittins Policy is Nearly Optimal in the M/G/k un VENUE: Information Theory Forum.	Stanford, CA (virtual), May 2021 Ider Extremely General Conditions".
<b>The Ohio State University</b> Host: Ness Shroff. TALK: "Near-Optimal Scheduling: Towards a Unified Theory"	Columbus, OH (virtual), March 2021 ".
University of Illinois at Urbana-Champaign Host: R. Srikant. TALK: "The Gittins Policy is Nearly Optimal in the M/G/k un VENUE: SINE Seminar.	Urbana, IL (virtual), February 2021 Ider Extremely General Conditions".
<b>Carnegie Mellon University</b> TALK: "The Gittins Policy is Nearly Optimal in the M/G/k un VENUE: CS Theory Lunch.	Pittsburgh, PA (virtual), November 2020 der Extremely General Conditions".
<b>Stanford University</b> Host: Ramesh Johari. TALK: "Simple Near-Optimal Scheduling for the M/G/1". VENUE: ISL Colloquium.	Stanford, CA, October 2019
University of California, Berkeley Host: Rhonda Righter. TALK: "SOAP: One Clean Analysis of All Age-Based Schedult VENUE: IEOR Seminar.	Berkeley, CA, October 2019 ing Policies".

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<b>University of Washington</b> Host: Anna Karlin.	Seattle, WA, September 2019
TALK: "SOAP: One Clean Analysis of All Age-Based Sched VENUE: CS Theory Seminar.	uling Policies".
IBM Research Hosts: Mark Squillante and Soumyadip Ghosh. TALK: "SOAP: One Clean Analysis of All Age-Based Sched VENUE: IBM Research Seminar.	Yorktown Heights, NY, June–August 2019 uling Policies".
University of Antwerp Host: Benny Van-Houdt.	Antwerp, Belgium, April–May 2019
<b>Eindhoven University of Technology</b> Host: Onno Boxma. TALK: "SOAP: One Clean Analysis of All Age-Based Sched VENUE: Stochastics Colloquium.	Eindhoven, The Netherlands, December 2018 uling Policies".
University of Amsterdam Host: Jan-Pieter Dorsman. TALK: "SOAP: One Clean Analysis of All Age-Based Sched VENUE: SPIP Meeting.	Amsterdam, The Netherlands, December 2018 uling Policies".
<b>California Institute of Technology</b> Ноsт: Adam Wierman.	Pasedena, CA, June 2018
<b>Carnegie Mellon University</b> TALK: "SOAP: One Clean Analysis of All Age-Based Sched VENUE: CS Theory Lunch.	Pittsburgh, PA, April 2018 uling Policies".
Carnegie Mellon University TALK: "Scheduling with the Gittins Index". VENUE: CS Theory Lunch.	Pittsburgh, PA, February 2017

### **Conference Sessions Organized**

2022 INFORMS Annual MeetingIndianapolis, IN, October 2022Queueing and Scheduling: Multiserver Systems and Uncertainty.2022 CORS/INFORMS International ConferenceVancouver, BC, Canada, June 2022Multiserver Queues: Emerging Techniques in Performance Analysis.Vancouver, BC, Canada, June 2022

# **Other Activities**

**SIGBOVIK Organizing Committee**, *General Chair, Committee Member* Pittsburgh, PA, 2017–2018 Served on the committee that organizes SIGBOVIK, a tongue-in-cheek conference featuring <del>joke</del> Extremely Serious<sup>TM</sup> computer science research that occurs every O(April 1) at CMU. Served as general chair in 2018.

CMU SCS Musical, *Music Director, Musician* Played in (2017–2018) and conducted (2018) the pit band for the CMU School of Computer Science musical. Instruments: clarinet, tenor sax, drum pad. **MIT Educational Studies Program**, *Program Director, Teacher* Cambridge, MA, 2012–2017 Codirected two educational programs for middle- and high-school students, Spring HSSP 2013 and ProveIt 2013–2014, and taught numerous classes to middle- and high-school students on a variety of math and programming topics, including aforementioned employment teaching AP Physics C.

**MIT Asymptones**, *President, Singer, Arranger* Cambridge, MA, 2012–2016 Sang bass and arranged music for the Asymptones a cappella group. Served as group president in 2015.

**MIT Alpha Epsilon Pi Philanthropy**, *Logistics Lead*, *Graphic Designer* Cambridge, MA, 2013–2014 Designed a novel event, produced graphics, and led logistics for MIT AEП's 2014 philanthropy campaign, which raised \$30,000 for the Save a Child's Heart charity.