Curriculum Vitae

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Contents

1 Personal Information

Born in 1968; naturalized citizen of the USA.

2 Affiliation and Rank

Department of Computer Science, and Institute for Advanced Computer Studies (UMIACS); affiliated with the Applied Mathematics & Statistics, and Scientific Computation (AMSC) program since 2012.

Rank: Distinguished University Professor (since July, 2020).

3 Research Interests

Algorithms, probabilistic methods, data science, optimization, the Internet economy, fairness, networks, and public health; computing in the service of society. Specific interests include:

- algorithms, probabilistic methods, and continuous/combinatorial optimization;
- the interface of algorithms, AI, and machine learning in:
  - data science and health: incl. computational epidemiology, (cancer) genomics, pharmacology, organ exchange, and medical devices;
  - data science and the Internet economy: incl. E-commerce, digital marketing, cloud optimization, crowdsourcing, and social networks;
  - data science and fairness: systematically incorporating (probabilistic, per-user/demographic) fairness in AI and in algorithms.
- networking (wireless and peer-to-peer), social networks, and distributed/parallel algorithms; and
- computational approaches to sustainable growth.

4 Education

B.Tech.	Indian Institute of Technology, Madras	1989	Computer Science & Engineering
M.S.	Cornell University	1993	Computer Science
Ph.D.	Cornell University	1993	Computer Science

5 Work Experience

2020– Distinguished University Professor and Professor of Computer Science, University of Maryland.

2019– Amazon Scholar, Amazon Web Services (AWS).

2006–2020 Professor, Computer Science Department, University of Maryland.

2001–2006 Associate Professor with Tenure, Computer Science Department, University of Maryland.

1998–2001 Member of Technical Staff, Mathematics of Networks and Systems Research Dept., Bell Laboratories, Lucent Technologies, Murray Hill, NJ, USA.

1998 Senior Lecturer with tenure (equivalent to *Associate Professor* in the USA), School of Computing, National University of Singapore, Singapore.

1997–1998 Tenure-track Senior Lecturer (equivalent to *Associate Professor* in the USA), School of Computing, National University of Singapore, Singapore.

1995–1997 Tenure-track Lecturer (equivalent to *Assistant Professor* in the USA), School of Computing, National University of Singapore, Singapore.

1994 Member, Institute for Advanced Study, Princeton, USA.

1993–1994 Joint postdoctoral fellow, Institute for Advanced Study and DIMACS (Center for Discrete Mathematics and Theoretical Computer Science), USA.

1989–1992 Teaching Assistant, Dept. of Computer Science, Cornell University, USA.

6 Visiting Appointments

Various institutions including BRICS – Center for Basic Research in Computer Science (Aarhus, Denmark), CWI – Centrum voor Wiskunde en Informatica (Center for Mathematics and Computer Science, Amsterdam, Netherlands), Cornell University (USA), Google (Mountain View, USA), Indian Institute of Technology Madras (Chennai, India), Johns Hopkins University (USA), Los Alamos National Laboratory (USA), MIT (Massachusetts Institute of Technology, USA), Max-Planck Institute (Germany), Microsoft Research (Redmond, USA; Bangalore, India), Nanyang Technological University (Singapore), Sandia National Laboratories (USA), University of Melbourne (Australia), University of Rome (Italy), University of Venice (Italy), University of Warwick (England), University of Washington (USA), and the Weizmann Institute of Science (Israel).

7 Awards, Patents, and Recognition

- Promoted to *Distinguished University Professor* at the University of Maryland, effective July 2020: this is the highest academic honor the university confers upon its faculty.
- Appointed an *Amazon Scholar* with AWS, August 2019–present.
- Co-winner with A. Panconesi of the 2019 Edsger W. Dijkstra Prize in Distributed Computing, for our paper *Randomized Distributed Edge Coloring via an Extension of the Chernoff-Hoeffding Bounds*, SIAM Journal on Computing, 1997.

- Elected Fellow of professional societies:
  - Fellow of the ACM (Association for Computing Machinery), "For contributions to algorithms, probabilistic methods, and networks", 2015.
  - Fellow of the IEEE (Institute of Electrical and Electronics Engineers), "For contributions to randomized algorithms and probabilistic methods", 2010.
  - Fellow of the AAAS (American Association for the Advancement of Science), "For distinguished contributions to algorithms, probabilistic methods, and networks", 2012.
  - Fellow of the AMS (American Mathematical Society), "For contributions to theoretical computer science, discrete probability, network science and applications and for service to the profession", 2019.
  - Fellow of the EATCS (European Association for Theoretical Computer Science), "For major contributions to algorithms, the uses of randomisation in algorithms, randomness in networks, and the real-world applications of these topics", 2017.
  - Fellow of SIAM (Society for Industrial and Applied Mathematics), "For contributions to randomized algorithms and probabilistic methods with applications to network and computational science", 2020.
- *Distinguished Career Award in Computer Science*, Washington Academy of Sciences, 2021: "For distinguished contributions to algorithms, probabilistic methods, network science, artificial intelligence, data science, and applications."
- Elected Member of *Academia Europaea*, the Academy of Europe, 2018.
- Distinguished Faculty Award from the Board of Visitors of the College of Computing, Mathematical, and Natural Sciences (University of Maryland), 2016.
- Distinguished Alumnus Award, Indian Institute of Technology Madras, 2016.
- Editor-in-Chief of the *ACM Transactions on Algorithms* (TALG), September 2014–November 2020.
- Vice Chair of the *IEEE Technical Committee on the Mathematical Foundations of Computing*, January 2015 – December 2017. (Stepped down in December 2017 at the end of my term, due to other professional responsibilities.)
- Mentor for undergraduate student George Li who was selected as an Awardee of the *Computing Research Association* (CRA)'s prestigious **Outstanding Undergraduate Researcher Award** (URA), 2023-2024. (Please see the section "Recognition for Students Advised" for a list of honors received by my students when they were advised by me.)
- Mentor or co-mentor for **three** undergraduate students who won the prestigious Goldwater Scholarship: Naveen Durvasula, George Li, and Naveen Raman. (Please see the section "Recognition for Students Advised" for a list of honors received by my students when they were advised by me.)

- Invited by Honors student Meir Friedenberg to the College of Computing, Mathematical, and Natural Sciences undergraduate honors reception, University of Maryland, Spring 2017: Honors students "are each allowed to invite one professor who has had an impact on them during their undergraduate career".
- Honoree four times, *Annual University-Wide Celebration of Scholarship and Research*, University of Maryland (2017, 2015, 2013, and 2010).
- Invitee twice, *Annual Research Leaders Luncheon*, University of Maryland (2014 and 2011).
- Our paper "Modelling Disease Outbreaks in Realistic Urban Social Networks" that appeared in *Nature* in May 2004, received a good deal of media coverage, including *Reuters*, *MSNBC*, *International Herald Tribune*, and the *Boston Globe*.
- IBM Graduate Fellowship, 1992–1993.
- Research Fellowship, Mathematical Sciences Institute of Cornell University, Summer 1992.
- Best-Paper Awards:
  - Best Student Paper award for the paper "Deploying Vaccine Distribution Sites for Improved Accessibility and Equity to Support Pandemic Response" coauthored with G. Li, A. Li, M. V. Marathe, L. Tsepenekas, and A. Vullikanti, *International Conference on Autonomous Agents and Multiagent Systems* (AAMAS), 2022.
  - Best-Paper Award for the paper "Examining the Evolution of Ties in Social Networks: A Longitudinal Multi-Method Study" coauthored with S. Shivarajan and T. DuBois, *Proc. Academy of Management Annual Meeting*, 2012. (Adjudged one of the best accepted papers; appears in the Best Paper Proceedings.)
  - Best-Paper Award for the paper "Predicting Trust and Distrust in Social Networks" coauthored with T. DuBois and J. Golbeck, *IEEE International Conference on Social Computing* (SocialCom), 2011.
  - Best-Paper Award for the paper "Distributed Ranked Search" coauthored with V. Gopalakrishnan, R. Morselli, B. Bhattacharjee, and P. Keleher, *Annual International Conference on High Performance Computing* (HiPC), 2007.
  - Co-Winner, Best Student Paper Award for the paper "Improved Distributed Algorithms for Coloring and Network Decomposition Problems" coauthored with A. Panconesi, *ACM Symposium on Theory of Computing* (STOC), 1992.
- Papers invited to journal special-issues for conferences:
  - Our AAMAS 2022 paper "Deploying Vaccine Distribution Sites for Improved Accessibility and Equity to Support Pandemic Response" was invited for fast-track publication, and published, in the journal *Autonomous Agents and Multi-Agent Systems* (JAAMAS).
  - Paper "Lift-and-Round to Improve Weighted Completion Time on Unrelated Machines" invited to and published in the special issue of the *SIAM Journal on Computing* dedicated to selected papers from the *STOC 2016* conference.

  - Paper "An Improved Approximation for k-median, and Positive Correlation in Budgeted Optimization" invited to and published in the special issue of the *ACM Transactions on Algorithms* dedicated to selected papers from the *SODA 2015* conference.
  - Paper "On Computing Maximal Independent Sets of Hypergraphs in Parallel" chosen as among the best submissions to the *SPAA 2014* conference, invited to and published in a special issue of the *ACM Transactions on Parallel Computing*.
  - Paper "Maximum Bipartite Flow in Networks with Adaptive Channel Width" invited to and published in the special issue of *Theoretical Computer Science* dedicated to selected papers from the *ICALP 2009* conference.
  - Paper "Scheduling on Unrelated Machines under Tree-Like Precedence Constraints" invited to and published in the special issue of *Algorithmica* dedicated to selected papers from the *APPROX 2005* conference.
  - Paper "Integrality Ratio for Group Steiner Trees and Directed Steiner Trees" invited to the special issue of the *Journal of Algorithms* dedicated to selected papers from the *SODA 2003* conference; declined.

- Our paper *Allocation Problems in Ride-sharing Platforms: Online Matching with Offline Reusable Resources*, published in the *ACM Transactions on Economics and Computation* (TEAC), 2021, was determined by ACM Journals as one of the "top five downloaded articles" for TEAC papers published in 2021 and 2022.

- Member, winning team (team-mates: A. Nagarajan and R. Venkatasubramani), First Mathematics Contest held among the students of the Indian Institute of Technology Madras, 1988.

- Eighth in India, Joint Entrance Examination for the Indian Institutes of Technology, 1985.

- U. S. Patent 11,863,613 B1, *Allocation of workloads in dynamic worker fleet*, with M. Sathe and P. Nekkar. (Issued 2024; assigned to Amazon Technologies, Inc.)

- U. S. Patent 7,280,526, *Fast and scalable approximation methods for finding minimum cost flows with shared recovery strategies, and system using same*, with L. K. Fleischer, F. B. Shepherd, and I. Saniee. (Issued 2007; assigned to Lucent Technologies.)

- U. S. Patent 7,020,698, *System And Method For Locating A Closest Server In Response To A Client Domain Name Request*, with M. Andrews, M. Hofmann, F. B. Shepherd, P. Winkler, and F. Zane. (Issued 2006; assigned to Lucent Technologies.)

- U. S. Patent 6,687,363, *Method of Designing Signaling Networks for Internet Telephony*, with M. Aravamudan, K. Kumaran, and K. G. Ramakrishnan. (Issued 2004; assigned to Lucent Technologies.)

8 Recognition for Students Advised

- Undergraduate student George Li was selected as an Awardee of the 2023-2024 Computing Research Association's (CRA) *Outstanding Undergraduate Researcher Award* (URA).

- Undergraduate student George Li received the University of Maryland's *Flagship Fellowship*, a prestigious award for recruiting exceptional PhD students to UMD, in 2024.
- Ph.D. student Nitya Raju was a recipient of an *Outstanding Graduate Research Assistant Award* from the University of Maryland's Graduate School for the Academic Year 2023-24.
- Anushka Gandhi, high-school student whose research project was co-supervised by Prof.s Achla Marathe, Anil Vullikanti, and me, was admitted to the University of Pennsylvania in 2022.
- George Li, Computer Science–Mathematics undergraduate student, received the Aziz Mathematics Scholarship (the University of Maryland mathematics department's highest award of excellence for a non-graduating mathematics major), 2022.
- Ph.D. student Leonidas Tsepenekas received an Ann G. Wylie Dissertation Fellowship from the University of Maryland's Graduate School in 2022.
- Undergraduate student George Li was named a 2022 Goldwater Scholar, 2022.
- Ph.D. student Seyed Esmaeili was a recipient of an *Outstanding Graduate Research Assistant Award* from the University of Maryland's Graduate School for the Academic Year 2021-22.
- Undergraduate student Naveen Raman received a CRA Undergraduate Researcher of the Year Finalist award, 2022.
- Undergraduate student Naveen Raman received a Philip Merill Presidential Award from the University of Maryland, 2022.
- Undergraduate student Naveen Raman was selected in 2022 for a Churchill Scholarship, which pays for a year of study at the University of Cambridge, UK.
- Undergraduate student George Li received a Michael Antonov Endowed Scholarship from the Department of Computer Science, University of Maryland, in 2021.
- Shreya Vallimanalan, student of Centennial High School whose research project was co-supervised by Prof. Anil Vullikanti and me, was admitted to the University of Pennsylvania in 2021.
- Undergraduate student Naveen Raman was named a 2021 Goldwater Scholar, March 2021.
- High-school student and high-school/undergraduate collaborator Naveen Durvasula was named a 2021 Goldwater Scholar, March 2021.
- Ph.D. student Aviva Prins and her co-authors received awards for their paper at two *NeurIPS 2020* workshops: "Best Thematic Submission (Extended Abstract Track)" at the *Workshop on Machine Learning for Health* (ML4H), and "Best Lightning Paper" at the *Workshop on Machine Learning in Public Health* (MLPH).
- Shawn Zhao, student of Montgomery Blair High School whose research project was co-supervised by Ph.D. student B. Brubach and me, had his paper with us accepted to the top-tier *ACM Conference on Economics and Computation* (EC), 2020; this paper was also accepted for oral presentation at the *Harvard CRCS Workshop on AI for Social Good*, 2020.

- Shawn Zhao, student of Montgomery Blair High School whose research project was co-supervised by Ph.D. student B. Brubach and me, was admitted to U. C. Berkeley in 2020.
- Ph.D. student Pan Xu's Ph.D. dissertation was the sole nominee from the University of Maryland for the Joint AAAI/ACM SIGAI Doctoral Dissertation Award, 2019.
- Ph.D. student Pan Xu received the Larry S. Davis Doctoral Dissertation Award from the Computer Science department of the University of Maryland in 2019; his Ph.D. thesis was also one of two nominees by the Computer Science department for the ACM Doctoral Dissertation Award.
- High-school student Xiaoran (Steven) Qu joined MIT as an undergraduate in 2019.
- High-school student Naveen Durvasula joined U. C. Berkeley as an undergraduate in the *Management, Entrepreneurship, and Technology* Program (dual degree with Electrical Engineering & Computer Science, and Business) in 2019.
- Ph.D. student Brian Brubach was chosen as a finalist for the University of Maryland's *Outstanding Graduate Student Distinguished Service Award*, 2019.
- High-school student Naveen Durvasula won the 2018-2019 Cutler-Bell Prize for Excellence in High School Computing. This prize, supported by the Association for Computing Machinery and the Computer Science Teachers Association, is a $10,000 award through an endowment established by Dr. Gordon Bell and Dr. David Cutler.
- High-school student Naveen Durvasula's poster was awarded third place in the "Mathematics, Computer Science, and Computer Engineering" category at the 2019 National Junior Science and Humanities Symposium (JSHS). (This is the national symposium; the next item is regional.)
- High-school student Naveen Durvasula received an invitation to give an oral presentation of his research paper at the 2019 Junior Science and Humanities Regional Symposium (JSHS) for Washington, DC.
- Ph.D. student Brian Brubach was a recipient of an *Outstanding Graduate Assistant Award* from the University of Maryland's Graduate School for the Academic Year 2018-19.
- High-school student Naveen Durvasula was a semi-finalist in the 78th Regeneron Science Talent Search (conducted by The Society for Science & the Public) in 2019. This is the USA's oldest prestigious science and mathematics competition for high-school seniors.
- High-school student Xiaoran (Steven) Qu was a semi-finalist in the 78th Regeneron Science Talent Search (conducted by The Society for Science & the Public) in 2019. This is the USA's oldest prestigious science and mathematics competition for high-school seniors.
- High-school student Steven Qu's project "Maximizing Social Leverage in Linear Threshold Influence Networks" won 42^{nd} place in the September 2018 round of the *International Pioneer Tournament*. (This tournament is open to people of all ages and projects of all types, and the 2018 tournament had thousands of participants.)

- Ph.D. student Pan Xu was a recipient of an *Ann G. Wylie Dissertation Fellowship* from the University of Maryland's Graduate School, 2018.
- Ph.D. student Pan Xu was a recipient of an *Outstanding Graduate Assistant Award* from the University of Maryland's Graduate School, 2018.
- Ph.D. student Pan Xu was the single nominee by the University of Maryland's Computer Science department for the College's *Board of Visitors Outstanding Graduate Student Award*, 2018.
- High-school student Naveen Durvasula was selected to the highly-selective Research Science Institute (RSI) at MIT and Harvard for Summer 2018.
- High-school student Steven Qu's project won first place in the Computer Science category at the Montgomery County Science Fair in 2018. The project also won a Meritorious Achievement Award from the U.S. Public Health Service Commissioned Officers Association for having "clearly demonstrated creative ability, scientific thought, and independent skill to address issues relevant to public health."
- Ph.D. student Karthik A. Sankararaman was selected to the UMD *Future Faculty Fellows* Program for 2018.
- Ph.D. student Brian Brubach was selected to the UMD *Future Faculty Fellows* Program for 2018.
- Ph.D. Student Karthik A. Sankararaman was one of two students nominated by the Computer Science Department, University of Maryland, for the IBM PhD Fellowship (2017).
- Research on kidney-exchange methodologies by Naveen Durvasula (high-school student advised by Prof. John Dickerson and me), was selected at the Montgomery Area Science Fair in March 2017 to compete in the *Intel International Science and Engineering Fair* (Intel ISEF) in May 2017.
- Ph.D. student Brian Brubach was a recipient of the University of Maryland Graduate School's *Outstanding Graduate Assistant* award, 2017.
- Thesis written by my Undergraduate Gemstone team (topic: "Combating Drowsy Driving", advised by me 2013–2016) was a finalist for the *James M. Wallace Outstanding Gemstone Team Thesis* Award, 2016.
- Undergraduate Gemstone team advised by me from 2013 to 2016 (topic: "Combating Drowsy Driving") had their research-paper accepted at the National Conference on Undergraduate Research (NCUR), University of North Carolina at Asheville, 2016.
- Ph.D. student D. Harris' thesis, *Algorithms and Generalizations for the Lovász Local Lemma*, 2015, was nominated for the ACM Doctoral Dissertation Award by the University of Maryland. (One of two nominations in 2015.)
- Antares Chen, student of Montgomery Blair High School whose research project was co-supervised by Ph.D. student D. Harris and me, had his paper with us accepted to the top-tier *ACM-SIAM Symposium on Discrete Algorithms* (SODA), 2016.

- Antares Chen, student of Montgomery Blair High School whose research project was co-supervised by Ph.D. student D. Harris and me, was admitted to U. C. Berkeley in 2015.
- Ph.D. student D. Harris was selected to speak at *China Theory Week*, 2014. This annual workshop is "for the rising stars of CS theory, with the most accomplished PhD students from institutions worldwide meeting, presenting and discussing their research".
- Undergraduate Gemstone team advised by me from 2011 to 2014 (topic: "Reducing Information Overload") had their research-paper accepted at the National Conference on Undergraduate Research (NCUR), University of Kentucky, 2014.
- Ph.D. student T. DuBois was a co-author of our paper "Examining the Evolution of Ties in Social Networks: A Longitudinal Multi-Method Study" that was adjudged one of the best accepted papers in the *Proc. Academy of Management Annual Meeting*, 2012; the paper appears in the Best Paper Proceedings.
- Ph.D. student T. DuBois was a co-author of our paper "Predicting Trust and Distrust in Social Networks" that received the Best Paper Award at the *IEEE International Conference on Social Computing* (SocialCom), 2011.
- Ph.D. student T. DuBois received a Dean's Fellowship award for 2009-2010.
- Ph.D. student D. Levin was an author of the paper that was co-winner of the Best Paper Award at the *USENIX Symposium on Networked Systems Design and Implementation* (NSDI), April 2009.
- Ph.D. student D. Levin received a Microsoft Live Labs Fellowship in January 2008.
- Levon Mkrtchyan, student of Montgomery Blair High School, whose Senior Research Project on *Distributed Algorithms* was supervised by me, joined the University of Maryland (Computer Science major) in Fall 2007, supported by a four-year President's Scholarship.
- Ph.D. student D. Levin received a Dean's Fellowship award for 2006-2007.
- Ph.D. student S. Parthasarathy's thesis, *Resource Allocation in Networked and Distributed Environments*, 2006, was nominated for the ACM Doctoral Dissertation Award by the Dept. of Computer Science, University of Maryland. (One of two nominations in 2006.)
- Ph.D. student S. Parthasarathy received a Dean's Fellowship award for 2005-2006.

9 Papers in Refereed Journals

1. B. Brubach, N. Grammel, W. Ma, and A. Srinivasan, "Online Matching Frameworks under Stochastic Rewards, Product Ranking, and Unknown Patience". *Operations Research*, accepted for publication.
2. A. Baveja, A. Chavan, A. Nikiforov, A. Srinivasan, and P. Xu, "Improved Sample-Complexity Bounds in Stochastic Optimization". *Operations Research*, to appear.

3. B. Balaji, G. Vunnava, N. Domingo, S. Gupta, H. Gupta, G. Guest, and A. Srinivasan, "Flamingo: Environmental Impact Factor Matching for Life Cycle Assessment with Zero-Shot Machine Learning". *ACM Journal on Computing and Sustainable Societies*, Vol. 1, 1–23, 2023.

4. G. Li, A. Li, M. V. Marathe, A. Srinivasan, L. Tsepenekas, and A. Vullikanti, "Deploying Vaccine Distribution Sites for Improved Accessibility and Equity to Support Pandemic Response". *Autonomous Agents and Multiagent Systems*, 37(2):31, 2023.

5. A. Baveja, A. Srinivasan, and X. Qu, "Approximating weighted completion time via stronger negative correlation". *Journal of Scheduling*, 2023. (Published online on 30th March, 2023.)

6. S. S. Peruru, A. Srinivasan, R. Ganti, and K. Jagannathan, "Low-complexity scheduling algorithms with constant queue length and throughput guarantees", *Performance Evaluation*, Vol. 157-–158, 2022.

7. D. G. Harris, T. Pensyl, A. Srinivasan, and K. Trinh, "Dependent randomized rounding for clustering and partition systems with knapsack constraints". *Journal of Machine Learning Research* (JMLR), Vol. 23, 1–41, 2022.

8. J. P. Dickerson, K. A. Sankararaman, A. Srinivasan, and P. Xu, "Allocation Problems in Ride Sharing Platforms: Online Matching with Offline Reusable Resources". *ACM Transactions on Economics and Computation*, Vol. 9, Number 3, 13:1–13:17, 2021.

9. A. Chen, D. G. Harris, and A. Srinivasan, "Partial Resampling to Approximate Covering Integer Programs". *Random Structures & Algorithms*, Vol. 58, 68–93, 2021.

10. B. Brubach, K. A. Sankararaman, A. Srinivasan, and P. Xu, "Online Stochastic Matching: New Algorithms and Bounds". *Algorithmica*, Vol. 82, 10:2737–2783, 2020.

11. B. Brubach, K. A. Sankararaman, A. Srinivasan, and P. Xu, "Algorithms to Approximate Column-Sparse Packing Problems". *ACM Transactions on Algorithms*, Vol. 16, 10:1–10:32, 2020.

12. B. Brubach, K. A. Sankararaman, A. Srinivasan, and P. Xu, "Attenuate Locally, Win Globally: Attenuation-based Frameworks for Online Stochastic Matching with Timeouts". *Algorithmica*, Vol. 82, 64–87, 2020.

13. N. Bansal, A. Srinivasan, and O. Svensson, "Lift-and-Round to Improve Weighted Completion Time on Unrelated Machines". Special issue of the *SIAM Journal on Computing* devoted to selected papers from the STOC 2016 conference; published online October 2019, pages STOC16-138–STOC16-159. (Published in print in Vol. 50, Number 3, 2021.)

14. D. G. Harris, S. Li, T. Pensyl, A. Srinivasan, and K. Trinh, "Approximation Algorithms for Stochastic Clustering". *Journal of Machine Learning Research* (JMLR), Vol. 20, No. 153, 1–33, 2019.

15. D. G. Harris and A. Srinivasan, "The Moser-Tardos Framework with Partial Resampling." *Journal of the ACM*, Vol. 66, 36:1–36:45, 2019.

16. D. G. Harris, T. Pensyl, A. Srinivasan, and K. Trinh, "A Lottery Model for Center-type Problems with Outliers". *ACM Transactions on Algorithms*, Vol. 15, Number 3, 36:1–36:25, 2019.

17. A. Baveja, A. Chavan, A. Nikiforov, A. Srinivasan, and P. Xu, "Improved Bounds in Stochastic Matching and Optimization". *Algorithmica*, Vol. 80, Number 11, 3225–3252, 2018.

18. B. Saha and A. Srinivasan, "A Randomized Approximation Technique for Resource-Allocation Problems". *Random Structures & Algorithms*, Vol. 52, 680–715, 2018.

19. J. Byrka and A. Srinivasan, "Approximation Algorithms for Stochastic and Risk-Averse Optimization". *SIAM Journal on Discrete Mathematics*, Vol. 32, Issue 1, 44–63, 2018.

20. J. Byrka, T. Pensyl, B. Rybicki, J. Spoerhase, A. Srinivasan, and K. Trinh, "An Improved Approximation Algorithm for Knapsack Median Using Sparsification". *Algorithmica*, Vol. 80, 1093–1114, 2018.

21. D. G. Harris and A. Srinivasan, "Improved Bounds and Algorithms for Graph Cuts and Network Reliability". *Random Structures & Algorithms*, Vol. 52, Issue 1, 74–135, 2018.

22. D. G. Harris and A. Srinivasan, "A Constructive Algorithm for the Lovász Local Lemma on Permutations". *Theory of Computing*, Volume 13, Article 17, pages 1–41, 2017.

23. D. G. Harris and A. Srinivasan, "Algorithmic and enumerative aspects of the Moser-Tardos distribution". *ACM Transactions on Algorithms*, Volume 13, Issue 3, 33:1–33:40, 2017.

24. J. Byrka, T. Pensyl, B. Rybicki, A. Srinivasan, and K. Trinh, "An Improved Approximation for k-median, and Positive Correlation in Budgeted Optimization". *ACM Transactions on Algorithms*, Volume 13, Issue 2, 23:1–23:31, March 2017. Special issue of the journal dedicated to selected papers from the *SODA 2015* conference.

25. D. G. Harris, E. Morsy, G. Pandurangan, P. Robinson, and A. Srinivasan, "Efficient Computation of Balanced Structures." *Random Structures & Algorithms*, Vol. 9, No. 2, 322–344, 2016.

26. V. S. A. Kumar, M. V. Marathe, S. Parthasarathy, and A. Srinivasan, "Distributed Algorithms for End-to-End Packet-Scheduling in Wireless Ad-Hoc Networks". *ACM Transactions on Algorithms*, Vol. 12, No. 3, 2016.

27. I. Bercea, N. Goyal, D. G. Harris, and A. Srinivasan, "On Computing Maximal Independent Sets of Hypergraphs in Parallel". *ACM Transactions on Parallel Computing*, Vol. 3, No. 1, 2016.

28. D. G. Harris and A. Srinivasan, "A Note on Near-Optimal Coloring of Shift Hypergraphs". *Random Structures & Algorithms*, Vol. 48, No. 1, 53–56, 2016.

29. A. Ambainis, W. Gasarch, A. Srinivasan, and A. Utis, "Lower Bounds on the Deterministic and Quantum Communication Complexity of Hamming-Distance Problems". *ACM Transactions on Computation Theory*, Vol. 7, Issue 3, 2015.

30. S. Shivarajan, T. DuBois, and A. Srinivasan, "Examining how marginalized stakeholders successfully redress their issues: a social networks approach". *Annals in Social Responsibility*, Vol. 1, 108–130, 2015.

31. B. Han, J. Li, and A. Srinivasan, "On the Energy Efficiency of Device Discovery in Mobile Opportunistic Networks: A Systematic Approach". *IEEE Transactions on Mobile Computing*, Vol. 14, No. 4, 786–799, 2015.

32. B. Han, J. Li, and A. Srinivasan, "Your Friends Have More Friends Than You Do: Identifying Influential Mobile Users Through Random-Walk Sampling". *IEEE/ACM Transactions on Networking*, Vol. 22, No. 5, 1389–1400, 2014.

33. S. Alaei, A. Malekian, and A. Srinivasan, "On Random Sampling Auctions for Digital Goods". *ACM Transactions on Economics and Computation*, Vol. 2, No. 3, 2014.

34. V. S. A. Kumar, S. Parthasarathy, G. Pei, and A. Srinivasan, "Approximation algorithms for throughput maximization in wireless networks with delay constraints". *IEEE/ACM Transactions on Networking*, Vol. 21, No. 6, 1988–2000, 2013.

35. S. Shivarajan and A. Srinivasan, "The Poor as Suppliers of Intellectual Property: A Social Network Approach to Sustainable Poverty Alleviation". *Business Ethics Quarterly*, Vol. 23, No. 3, 381–406, 2013.

36. N. Bansal, N. Korula, V. Nagarajan, and A. Srinivasan, "Solving Packing Integer Programs via Randomized Rounding with Alterations". *Theory of Computing*, Vol. 8, 533–565, 2012.

37. T. DuBois, S. Eubank, and A. Srinivasan, "The Effect of Random Edge Removal on Network Degree Sequence". *The Electronic Journal of Combinatorics*, Vol. 19, P51, 2012. (Twenty pages.)

38. B. Han, P. Hui, V. S. A. Kumar, M. V. Marathe, J. Shao, and A. Srinivasan, "Mobile Data Offloading through Opportunistic Communications and Social Participation". *IEEE Transactions on Mobile Computing*, Vol. 11(5), 821–834, 2012.

39. B. Haeupler, B. Saha, and A. Srinivasan, "New Constructive Aspects of the Lovász Local Lemma". *Journal of the ACM*, Vol. 58, Issue 6, 2011.

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10 Journal Submissions in *Minor Revision* Status

The following journal submissions are currently in *Minor Revision* status:

1. B. Brubach, N. Grammel, D. G. Harris, A. Srinivasan, L. Tsepenekas, and A. Vullikanti, "Stochastic Optimization and Learning for Two-Stage Supplier Problems". (Previous ttle: "Approximating Two-Stage Stochastic Supplier Problems".) *Minor Revision* status with *ACM Transactions on Probabilistic Machine Learning* (TOPML).

2. B. Brubach, N. Grammel, A. Srinivasan, and W. Ma, "Improved Guarantees for Offline Stochastic Matching via new Ordered Contention Resolution Schemes". *Minor Revision* status with *Mathematics of Operations Research*.

11 Book Chapters and Invited Articles

1. N. Ramakrishnan, C.-T. Lu, M. V. Marathe, A. Marathe, A. Vullikanti, S. Eubank, S. Leman, M. Roan, J. S. Brownstein, K. Summers, L. Getoor, A. Srinivasan, T. Choudhury, D. Gupta, and D. Mares, "Model-Based Forecasting of Significant Societal Events". Predictive Analytics column, *IEEE Intelligent Systems*, Vol. 30, 86–90, 2015.

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12 Papers in Refereed Conferences

1. J. Luque, S. Duppala, J. P. Dickerson, and A. Srinivasan, "Barter Exchange with Shared Item Valuations". To appear, *Proc. The Web Conference* (formerly known as WWW, the International World Wide Web Conference), 2024.

2. C. Herlihy, A. Prins, A. Srinivasan, and J. P. Dickerson, "Planning to Fairly Allocate: Probabilistic Fairness in the Restless Bandit Setting". *Proc. ACM Conference on Knowledge Discovery and Data Mining* (KDD), 732–740, 2023. (A preliminary version appeared in the *Proc. Workshop on Responsible Decision Making in Dynamic Environments* at the *International Conference on Machine Learning* (ICML), 2022.)

3. B. Balaji, G. Guest, G. Vunnava, J. Kramer, A. Srinivasan, and M. Taptich, "Scaling Carbon Footprinting: Challenges and Opportunities". *Proc. ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies* (COMPASS), 2023. (Poster track.) Also presented at the *AAAI 2023 Fall Symposium* on *Artificial Intelligence and Climate: The Role of AI in a Climate-Smart Sustainable Future*, 2023.

4. S. Duppala, J. Luque, J. P. Dickerson, and A. Srinivasan, "Group Fairness in Set Packing Problems". *Proc. International Joint Conference on Artificial Intelligence* (IJCAI), 391–399, 2023. (Also accepted to the *First Workshop on Computational Fair Division* (CFD), co-located with IJCAI 2023.)

5. D. Q. Chen, A. Li, G. Z. Li, M. V. Marathe, A. Srinivasan, L. Tsepenekas, and A. Vullikanti, "Efficient and Equitable Deployment of Mobile Vaccine Distribution Centers". *Proc. International Joint Conference on Artificial Intelligence* (IJCAI), 64–72, 2023.

6. S. A. Esmaeili, S. Duppala, D. Cheng, V. Nanda, A. Srinivasan, and J. P. Dickerson, "Rawlsian Fairness in Online Bipartite Matching: Two-sided, Group, and Individual". *Proc. Thirty-Seventh AAAI Conference on Artificial Intelligence* (AAAI), 5624–5632, 2023. (A preliminary version with fewer results—co-authored with Esmaeili, Duppala, Nanda, and Dickerson—appeared as a refereed two-page abstract at AAMAS 2022.)

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9. N. Durvasula, J. P. Dickerson, and A. Srinivasan, "Forecasting Patient Outcomes in Kidney Exchange". *Proc. International Joint Conference on Artificial Intelligence* (IJCAI-ECAI), 5052–5058, 2022. (*AI for Good* track.)

10. A. Babay, M. Dinitz, A. Srinivasan, L. Tsepenekas, and A. Vullikanti, "Controlling Epidemic Spread using Probabilistic Diffusion Models on Networks". *Proc. International Conference on Artifical Intelligence and Statistics* (AISTATS), 11641–11654, 2022.

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13 Other Papers and Theses

1. S. Shivarajan and A. Srinivasan, "Bottom of the Pyramid: Served 'by' the world's poor profitably? (A Social Networks Approach for Sustainable Poverty Alleviation)". *Proc. First CR3 Conference* (on Corporate Responsibility/Global Responsibility), 2011.

2. J. Byrka, M. R. Ghodsi, and A. Srinivasan, "LP-rounding algorithms for facility-location problems". Technical Report, arXiv:1007.3611, 2010.

3. L. Fleischer, A. Meyerson, I. Saniee, B. Shepherd, and A. Srinivasan, "A Scalable Algorithm for the Minimum Expected Cost Restorable Flow Problem". Technical Report TR-2003-10, Computational Optimization Research Center, Columbia University, 2003. (A version was presented by L. Fleischer at the *DIMACS Mini-Workshop on Quality of Service Issues in the Internet*, 2001.)

4. J. H. Spencer, A. Srinivasan, and P. Tetali. "The Discrepancy of Permutation Families". Unpublished manuscript, 2001.

5. A. Srinivasan, "Techniques for Probabilistic Analysis and Randomness-Efficient Computation". TR 93-1378, Department of Computer Science, Cornell University, 1993.

6. A. Srinivasan, "A Generalization of Brooks' Theorem". TR 92-1302, Department of Computer Science, Cornell University, 1992.

7. A. Srinivasan, "Fast Algorithms for Some Problems on Interval and Permutation Graphs". B. Tech. Thesis, Department of Computer Science & Engineering, Indian Institute of Technology Madras, Chennai, 1989.

14 Contracts, Grants, and Research Awards

1. *Collaborative Research: SaTC: CORE: Medium: Graph Mining and Network Science with Differential Privacy: Efficient Algorithms and Fundamental Limits*, 2023–present. PI: Ravi Tandon (U. Arizona); coPIs Laxman Dhulipala (UMD), Aravind Srinivasan, and Anil Vullikanti (U. Virginia). Srinivasan is the PI for Maryland.

2. *Computational Techniques to Design and Analyze Effective Digital Contact Tracing Methods in the wake of the COVID-19 Outbreak*, Google's grants program for COVID-19 AI and data analytics, 2020–present. Fellow PIs: Simon Levin (Princeton), Madhav Marathe (U. Virginia), and Anil Vullikanti (U. Virginia).

3. *Expeditions: Collaborative Research: Global Pervasive Computational Epidemiology*, National Science Foundation, 2020–present. Multi-institutional collaborative project; Srinivasan is the PI for Maryland.

4. *AI for Efficient and Equitable Organ Allocation Policies*, Google Research Award, 2019. PI: John Dickerson; coPI: Aravind Srinivasan.

5. *Deep Reinforcement Learning for Rideshare Dispatch*, Maryland Transportation Institute Seed Grant, FY 2018–2019. PI: John Dickerson; coPIs: Ilya Ryzhov and Aravind Srinivasan.

6. *Algorithms for Cloud-Service and Ad-Delivery Optimization*, Amazon Research Award, Amazon Inc., 2018. Sole Investigator.

7. *Research Gift*, Google Inc., 2018. PIs: John Dickerson and Aravind Srinivasan.

8. *An AI-Based Decision Support Tool for Potential Participants in a Kidney Exchange*, AI in Business and Society Seed Grant, Smith School of Business, University of Maryland, 2018-2019. PIs: John Dickerson, Ilya Ryzhov, and Aravind Srinivasan.

9. *EAGER: Probabilistic Models and Algorithms*, National Science Foundation, 2017–2020. Sole Investigator.

10. *FOCS Conference Student and Postdoc Travel Support*, National Science Foundation, 2017–2018. Sole Investigator. (This is not a research grant; it is for student- and postdoc- travel support in my capacity as Vice Chair of the *IEEE Technical Committee on the Mathematical Foundations of Computing*.)

11. *Data Science Research Award*, Adobe, Inc., 2017. Sole Investigator.

12. *FOCS Conference Student Travel Support*, National Science Foundation, 2016–2017. Sole Investigator. (This is not a research grant; it is for student- and postdoc- travel support in my capacity as Vice Chair of the *IEEE Technical Committee on the Mathematical Foundations of Computing*.)

13. *Randomized Algorithms and Stochastic Models*, National Science Foundation, 2014–2019. Sole Investigator.

14. *Matching Advertisements and Content to Customers*, Digital Marketing Research Awards, Adobe, Inc., 2014. Sole Investigator.

15. *EMBERS: Early Model-Based Event Recognition using Surrogates*, IARPA, 2012–2016. Multi-institutional collaborative project; Srinivasan was the PI for Maryland.

16. *NetSE: Large: Collaborative Research: Contagion in Large Socio-Communication Networks*, National Science Foundation, 2010–2016. Multi-institutional collaborative project; Srinivasan was the PI for Maryland.

17. *Rigorous Probabilistic Trust-Inference with Applications to Social Network Analysis*, U.S. Army Research Office, 2010–2011. PI: Jennifer Golbeck, University of Maryland; Srinivasan was coPI.

18. *Collaborative Research: NeTS-NBD: An Integrated Approach to Computing Capacity and Developing Efficient Cross-Layer Protocols for Wireless Networks*, National Science Foundation, 2006–2011. Multi-institutional collaborative project; Srinivasan was the PI for Maryland.

19. *Public Health Preparedness for the Vancouver 2010 Winter Olympic Games: Developing Network-based Strategies for Major Public Events*, Canadian Institutes of Health Research, 2006–2007. Multi-institutional collaborative project.

20. *Resilient Storage and Querying in Decentralized Networks*, National Science Foundation, ITR for National Priorities, 2004–2010. PI: Bobby (Samrat) Bhattacharjee; co-PIs Sudarshan Chawathe, Jonathan Katz, Michael Marsh, and Aravind Srinivasan.

21. *Probabilistic Approaches in Combinatorial Optimization*, National Science Foundation, 2002–2006. Sole Investigator.

22. *Algorithms for message routing and job-shop scheduling*, National University of Singapore Academic Research Fund, 1997–1998. Sole Investigator.

23. *Implementation of Approximation Algorithms and Heuristics for Optimisation*, National University of Singapore Academic Research Fund, 1996–1997. Sole Investigator.

24. *Travel Grants for Young Asian Scholars*, University of Melbourne, Australia, 1996. Sole Investigator.

25. *Research in Parallel Computing and Combinatorial Optimisation*, National University of Singapore Academic Research Fund, 1996–1998. Sole Investigator.

15 Book Reviews and Technical Interviews

1. A. Srinivasan, "Review of *Probability and Computing: Randomization and Probabilistic Techniques in Algorithms and Data Analysis (Second Ed.)* by Michael Mitzenmacher and Eli Upfal", *ACM SIGACT News*, Vol. 49, Number 3, 20–22, 2018.

2. A. Srinivasan, "Review of *Visions of Infinity: The Great Mathematical Problems* by Ian Stewart", *ACM SIGACT News*, Vol. 45, Number 4, 41–45, 2014.

3. A. Srinivasan, "Review of *Concentration of Measure for the Analysis of Randomized Algorithms* by Devdatt P. Dubhashi and Alessandro Panconesi", *ACM SIGACT News*, Vol. 41, Number 1, 28–30, 2010.

4. A. Srinivasan, "Review of *The Random Projection Method* by Santosh Vempala," *ACM SIGACT News*, Vol. 37, Issue 4, 41–43, 2006.

5. A. Srinivasan, "An Interview with STOC Best Student Paper Winner Tom Hayes," *ACM SIGACT News*, Vol. 34, Number 3, 88–89, 2003.

16 Plenary, Distinguished, and other Invited Talks (Selected)

- *William Tutte Colloquium*, Department of Combinatorics and Optimization, University of Waterloo, Canada (planned for Spring or Summer 2024).
- Invited speaker, Workshop on *Prevention, Early Detection and Response to Antimicrobial Resistance Pandemics*, Center for Health and Wellbeing, Princeton University, 2022.
- *Boeing Distinguished Colloquium*, Department of Applied Mathematics, University of Washington, Seattle, 2022.
- Tutorial on "Fairness in Clustering", *Thirty-Sixth AAAI Conference on Artificial Intelligence* (AAAI-22), 2022. Jointly developed with Brian Brubach, Deeparnab Chakrabarty, John P. Dickerson, Seyed Esmaeili, Matthäus Kleindessner, Marina Knittel, Jamie Morgenstern, Samira Samadi, and Leonidas Tsepenekas.
- Invited speaker, Symposium on *Advancing the Legal Landscape: The Future of AI in Law*, Journal of Business & Technology Law, University of Maryland Francis King Carey School of Law, 2022.
- *Distinguished Lecture Series*, Department of Computer Science, Northwestern University, 2022.
- Tutorial on "Fairness in AI, ML, and Algorithms", *Amazon Machine Learning Conference* (AMLC), 2021.
- Invited speaker, *Facebook Operations Research Workshop*, 2021 (held virtually).
- Plenary speaker, *36th Annual Conference of the Ramanujan Mathematical Society*, August 2021 (virtual talk).
- Invited Speaker, *Tenth World Congress in Probability and Statistics* (a quadrennial event), Seoul, South Korea, 2021. (Congress planned for 2020 moved to 2021 and online, due to COVID-19.)
- Invited Speaker, *AI Talks* series of distinguished speaker seminars in AI, Chalmers University, Sweden, November 2020.
- Invited keynote speaker, *Biennial Workshop on Models and Algorithms for Planning and Scheduling Problems* (MAPSP), Renesse, Netherlands, 2019.
- Invited speaker, *Fifth Google Market Algorithms Workshop*, Google, Mountain View, 2019.
- Invited lectures, Workshop on *Modelling of unsecurity*, Department of Mathematics of the Unviersity of Technology and the Fraunhofer-Institute for Industrial Mathematics, Kaiserslautern, Germany, September 2017. (Declined due to an injury.)
- Invited plenary lecture, I-CORE (Israeli Center of Research Excellence in Algorithms) annual meeting, Tel-Aviv University, Israel, September 2017. (Declined due to schedule-conflict.)

- One of the hour-long talks, Workshop on *Discrete Optimization via Continuous Relaxation*, Simons Institute, U. C. Berkeley, September 2017.
- Invited talk, *Highlights of Algorithms* conference (HALG), Berlin, 2017.
- Computer Science Distinguished Seminar, University of Houston, February 2017.
- Keynote speaker, *22nd International Computing and Combinatorics Conference* (COCOON), Ho Chi Minh City, Vietnam, 2016. (The other keynote speaker: Van Vu of Yale University.)
- One of the main hour-long invited talks, Workshop on *Relaxations and Polyhedral Methods*, Program in Combinatorial Optimization, Hausdorff Research Institute for Mathematics, University of Bonn, 2015. (The other hour-long talks were by Michel Goemans (MIT), Monique Laurent (CWI), and James Lee (U. Washington).)
- Invited speaker, *Graph Fest*, National Security Agency, 2015.
- Invited speaker, Institute for Mathematics and its Applications (IMA) Workshop on *The Power of Randomness in Computation*, Georgia Tech., 2015.
- Invited focus lecture, Workshop on *Discrepancy and Modern Roundings*, Bellairs Research Institute of McGill University, 2015.
- Joint Distinguished Seminar, Virginia Bioinformatics Institute and Department of Computer Science, Virginia Tech., 2014.
- Invited speaker, ICERM workshop on *Stochastic Graph Models*, Brown University, 2014.
- One of two invited talks, *SIAM Workshop on Network Science*, SIAM Annual Meeting, San Diego, USA, 2013. (The other invited speaker: Lada Adamic from the University of Michigan; 22 contributed talks.)
- Invited speaker, Institute for Computing in Science Workshop on *Graph and Hypergraph Problems in Computational Science: Applications and Algorithms*, Park City, USA, July 2012.
- Invited speaker, *Workshop on Network Science in Electrical Engineering and Computer Science*, Indian Institute of Science, India, January 2012.
- Invited speaker, *DIMACS and the Center for Computational Intractability Joint Workshop on Approximation Algorithms: The Last Decade and the Next*, Princeton University, USA, June 2011.
- Invited keynote speaker at the *Sixth ACM SIGACT/SIGMOBILE International Workshop on Foundations of Mobile Computing* (DIALM-POMC), Boston, USA, 2010. (Declined due to schedule-conflict.)
- Lecture at the *PanIIT Research Symposium* (part of the IIT Madras Golden Jubilee Celebrations), Indian Institute of Technology Madras, December 2008.

- Invited speaker, *Forty-Sixth Annual Allerton Conference on Communication, Control, and Computing*, University of Illinois at Urbana-Champaign, September 2008. (Declined due to schedule-conflict.)

- Invited speaker, *Network Design Workshop*, Ninth INFORMS Telecommunications Conference, March 2008.

- Invited speaker, *Fourth Symposium on Stochastic Algorithms, Foundations, and Applications* (SAGA), ETH Zurich, Switzerland, September 2007.

- Distinguished invited speaker, *Fifty-Third Midwest Theory Day*, Purdue University, December 2006.

- Invited speaker for *FriezeFest*, Workshop in honor of Prof. A. Frieze's 60th birthday, Carnegie-Mellon University, USA, October 2005.

- Invited speaker, *Workshop on Mathematical Modeling and Implications for Pandemic Influenza Preparedness*, Vancouver, March 2005. (Interdisciplinary workshop sponsored by the Public Health Agency of Canada, the British Columbia Centre for Disease Control, the Centre for Mathematics of Information Technology and Complex Systems, and the Pacific Institute of Mathematical Sciences.)

- Tutorial on "Performance of Peer-to-Peer Systems" with S. Banerjee, *Joint International Conference on Measurement and Modeling of Computer Systems* (SIGMETRICS-Performance), 2004.

- One of the main hour-long invited talks, *Second Annual McMaster Optimization Conference: Theory and Applications*, McMaster University, August 2002. (The other invited speakers: J. Betts (Boeing), S. Boyd (Stanford), C. Floudas (Princeton), R. Freund (MIT), R. Tapia (Rice), and Y. Ye (Stanford).)

- Invited speaker, *Workshop on Randomized Algorithms* preceding the Annual Conference on Foundations of Software Technology and Theoretical Computer Science, Kharagpur, India, December 1997.

- Keynote Speaker, Graduate Conference on Computer Science, State University of New York at Buffalo, March 1994.

- Department Colloquia: Duke University, Georgetown University, Indian Institute of Technology Madras, Johns Hopkins University, Nanyang Technological University (Singapore), Princeton University, Rice University, Sonoma State University, Swarthmore College, Toyota Technological Institute at Chicago, University of Connecticut, University of Iowa, and the University of Washington.

- Talks given at various institutions including Adobe, Inc., Amazon, Inc., Applied Physics Lab (Johns Hopkins University), AT&T Research Labs, Brown University (Institute for Computational and Experimental Research in Mathematics), Carnegie-Mellon University, Celera Genomics, Columbia University, Dartmouth College, Dagstuhl, DIMACS Center, EPFL, Georgia Tech., Google, Hebrew University of Jerusalem, Indian Institute of Science, Indian Institute of

Technology (Bombay, Madras), Institute for Advanced Study, Institute for Disease Modeling (Seattle), Institute of Mathematical Sciences (Chennai), Los Alamos National Laboratory, Max Planck Institute, McGill University, Microsoft Research (Bangalore, Redmond, Silicon Valley), MIT, National Institutes of Health, National Security Agency, New York University, Oxford University, Sandia National Laboratories, Stanford University (seminar converted to a group-discussion due to my flight's delay), Tata Institute of Fundamental Research, Technion, Uber (San Francisco), UC Berkeley (Simons Institute; talk delivered by video), UCLA, University of Chicago, University of Edinburgh, University of Illinois at Urbana-Champaign, University of Massachusetts at Amherst, University of Pennsylvania, University of Southern California, University of Texas at Austin, University of Toronto, University of Washington, and the Virginia Bioinformatics Institute.

17 Invited Short Courses (Selected)

- Course on "Randomized Algorithms", Indian Institute of Technology Madras, 2016. A full Ph.D.-level course offered under the *Global Initiative for Academic Networks* (GIAN) program.
- Mini-course on "Foundations of Machine Learning", Indian Institute of Technology Madras, 2014.
- Three-week course "Randomized Algorithms", Indian Institute of Technology Madras, June-July 2010. (Approximately 30 hours; equivalent to a full graduate-level course.)
- Short course on "Randomized rounding", Institute of Mathematical Sciences, Chennai, India, December 1997.
- Short course on "Approximation algorithms via randomized rounding", Joint summer school of the Humboldt-University (Berlin) and Adam Mickiewicz University (Poznan, Poland) on *Randomized Algorithms*, Antonin, Poland, September 1997.
- Short course on "Probabilistic Methods in Integer Programming," University of Melbourne, Australia, June–July 1996.
- Short course on "The Role of Randomness in Computation", BRICS (Basic Research Institute for Computer Science), University of Aarhus, Denmark, May 1995.

18 Courses Taught

Spring 2024	CMSC 651	Analysis of Algorithms
Fall 2023	CMSC 454	Algorithms for Data Science (64 students)
Spring 2023	CMSC 858C	Randomized Algorithms (34 students + 3 audit)
Fall 2022	CMSC 451	Design and Analysis of Computer Algorithms (76 students)
Spring 2022	CMSC 454	Algorithms for Data Science (52 students)
Fall 2021	CMSC 420	Advanced Data Structures (152 students)
Spring 2019	CMSC 451	Design and Analysis of Computer Algorithms (119 students)

Fall 2018	CMSC 451	Design and Analysis of Computer Algorithms (29 students)
Spring 2018	CMSC 651	Analysis of Algorithms (33 students + 2 audit)
Fall 2017	CMSC 451	Design and Analysis of Computer Algorithms (45 students)
Spring 2017	CMSC 858C	Randomized Algorithms (20 students + 3 audit)
Fall 2016	CMSC 451	Design and Analysis of Computer Algorithms (75 students)
Fall 2015	CMSC 858L	Foundations of Machine Learning (33 students + 1 audit)
Spring 2015	CMSC 858C	Randomized Algorithms (22 students + 5 audit)
Fall 2014	CMSC 451	Design and Analysis of Computer Algorithms (41 students)
Spring 2014	CMSC 287	Network Science and Networked Information: What can (Social) Networks do for us? (60 students)
Fall 2013	CMSC 651	Analysis of Algorithms (30 students)
Fall 2012	CMSC 651	Analysis of Algorithms (35 students + 2 audit)
Fall 2011	CMSC 858C	Randomized Algorithms (17 students)
Fall 2011	CMSC/MATH 456	Cryptology (39 students)
Spring 2011	HONR 219J	The Science Behind Social Networks and the Web (20 students)
Spring 2011	CMSC 858E	Models and Algorithms for Socio-Technical Networks (20 students + 3 audit)
Fall 2009	CMSC 652	Complexity Theory (12 students + 1 audit)
Fall 2009	CMSC/MATH 456	Cryptology (34 students)
Spring 2009	CMSC 858C	The Probabilistic Method (12 students + 3 audit)
Fall 2008	CMSC/MATH 456	Cryptology (29 students)
Spring 2007	CMSC 858S	Randomness and Computation (13 students + 2 audit)
Fall 2006	CMSC/MATH 456	Cryptology (35 students)
Spring 2006	CMSC 451	Design and Analysis of Computer Algorithms (32 students)
Fall 2005	CMSC/MATH 456	Cryptology (46 students + 1 audit)
Spring 2005	CMSC 451	Design and Analysis of Computer Algorithms (42 students)
Fall 2004	CMSC 858S	Algorithms in Networking (24 students + 1 audit)
Spring 2004	CMSC 451	Design and Analysis of Computer Algorithms (31 students)
Fall 2003	CMSC/MATH 456	Cryptology (37 students)
Spring 2003	CMSC 858T	Randomized Algorithms (10 students)
Fall 2002	CMSC 451	Design and Analysis of Computer Algorithms (45 students)
Spring 2002	CMSC 451	Design and Analysis of Computer Algorithms (28 students)
Fall 2001	CMSC 858S	Randomized Algorithms (23 students)

Undergraduate and graduate-level courses at the National University of Singapore, 1995–98.

19 New Courses Developed and Teaching Fellowships

1. *Algorithms for Data Science*, taught Spring 2022 and later. (Significant revamping of existing course.)

2. *Foundations of Machine Learning*, Fall 2015.

3. *Network Science and Networked Information: What can (Social) Networks do for us?*, taught

Spring 2014. Selected as an undergraduate *General Education I-Series* class, and as a *Marquee Course in Science and Technology* at the University of Maryland.

4. *The Science Behind Social Networks and the Web* (Honors course), taught Spring 2011.
5. *Models and Algorithms for Socio-Technical Networks*, taught Spring 2011.
6. *Algorithms in Networking*, taught Fall 2004.
7. *Randomized Algorithms*, taught Fall 2001 and later.
8. Named one of the *Sustainability Teaching Fellows* at the University of Maryland, 2018-2019.

20 Student Advising

20.1 Current Doctoral Students

Sharmila Duppala (co-advised with John Dickerson), Kishen Gowda (co-advised with Laxman Dhulipala), Nathaniel Grammel, Juan Luque, Sanna Madan (co-advised with Furong Huang and Eytan Ruppin), Aviva Prins (co-advised with John Dickerson), and Nitya Raju.

20.2 Graduated Doctoral Students

- Brian Brubach, *Markets, Elections, and Microbes: Data-driven Algorithms from Theory to Practice*, June 2020. First employment: Tenure-track faculty member, Wellesley College.
- Amit Chavan, *Delta-Based Storage and Querying for Versioned Datasets*, May 2018. First employment: Amazon Web Services.
- Thomas DuBois, *Using and Manipulating Probabilistic Connectivity in Social Networks*, April 2011. First employment: Laboratory for Telecommunications Sciences.
- Seyed Abdulaziz Esmaeili, *On Algorithms, Fairness, and Incentives*, June 2023. First employment: Postdoctoral researcher at MSRI/SLMath (Berkeley) and the University of Chicago.
- Bo Han, *Wide-Area Mobile Content Delivery*, August 2012. First employment: AT&T Labs Research.
- David G. Harris, *Algorithms and Generalizations for the Lovász Local Lemma*, August 2015. First employment: U.S. Federal Government.
- David Levin, *Systems-Compatible Incentives*, September 2010. First employment: HP Labs.
- Srinivasan Parthasarathy, *Resource Allocation in Networked and Distributed Environments*, July 2006. First employment: IBM T. J. Watson Research Center.
- Karthik Abinav Sankararaman, *Sequential Decision Making with Limited Resources*, July 2019. First employment: Facebook Research.

- Khoa Trinh, *Approximation Algorithms for Facility Location and Clustering Problems*, March 2017. First employment: Google.
- Leonidas Tsepenekas, *On Algorithmic Fairness and Stochastic Models for Combinatorial Optimization and Unsupervised Machine Learning*, October 2022. First employment: J. P. Morgan Chase AI Research.
- Nan Wang, *Modeling and Analysis of Massive Social Networks*, June 2005. First employment: Citadel Investment Group.
- Pan Xu, *Matching Algorithm Design in E-Commerce: Harnessing the Power of Machine Learning via Stochastic Optimization*, May 2019. First employment: Tenure-track Assistant Professor, New Jersey Institute of Technology.

(Brubach co-advised with Mihai Pop; Chavan co-advised with Amol Deshpande; Esmaeili, Tsepenekas, and Xu co-advised with John Dickerson; Han co-advised with Bobby Bhattacharjee; Levin co-advised with Bobby Bhattacharjee and Neil Spring.)

20.3 Master's Students Advised

- Ioana Bercea, University of Maryland, completed in 2013.
- Evar Jones, University of Maryland, 2021–present.
- Dan-Dan Lin, National University of Singapore, completed in 1998.
- Geoffrey Moores, University of Maryland, completed in 2020.
- Thomas Pensyl, University of Maryland, completed in 2016.
- Thomas Wrona, University of Maryland, 2022–present.

20.4 Supervision of Graduate-Student Independent Study

- Casey Mihaloew (modern randomized algorithms for game-tree search), Summer 2015.
- Neal Gupta (social networks, incentives, and crowdsourced interventions for public health), Spring 2015.
- Bin Han (machine learning), Fall 2013.
- Michael Kobyakov (complex networks), Fall 2005.

20.5 Mentorship of Undergraduate Research

- Mentor for Jiayi Alvin Wu's undergraduate research, 2022–present.
- Mentor for George Li's undergraduate research, 2020–present.

- Mentor for Zach Zhao's undergraduate research, 2020–2021.
- Co-mentor (with John Dickerson) for Uro Lyi's undergraduate research, 2019.
- Co-mentor (with John Dickerson and Max Leiserson) for Naveen Raman's undergraduate research, 2018–2020.
- Mentor for Michael Eleff's independent study (algorithms in finance), Spring 2015.
- Mentor for Jennifer Roberts' informal independent study on quantum computing, Spring 2004.
- Mentor for multi-person Gemstone projects at the University of Maryland:
  - on reducing information overload through an improved email-management interface, 2011–2014: project that combines algorithms, psychology, and human-computer interaction;
  - one that combines bio-engineering and computer science for medical devices, 2013–2016;
  - on novel pharmaceutical drug-development processes through improvements in machine learning and computational toxicology, 2018–2019.

20.6 Other Undergraduate Projects Supervised

Various projects on Internet applications, financial and other applications software, and combinatorial optimization, National University of Singapore.

20.7 Mentorship of High-School Students

- Supervisor for Research Project, Arjun Subramanian, 2023-present.
- Supervisor for Research Project, Tanya Das and Anushka Gandhi, 2021-2022. Co-advised with Prof.s Achla Marathe and Anil Vullikanti.
- Supervisor for Research Project, Shreya Vallimanalan (student of Centennial High School), 2020-2021. Co-advised with Prof. Anil Vullikanti.
- Supervisor for Research Project, Shawn Zhao (student of Montgomery Blair High School), 2019–2020. Co-advised with Brian Brubach.
- Supervisor for Research Project, Steven Qu (student of Montgomery Blair High School), 2017-2019. Co-advised with Prof.s Madhav Marathe and Anil Vullikanti.
- Supervisor for Research Project, Naveen Durvasula (student of Montgomery Blair High School), 2015-2019. Co-advised with Prof. John Dickerson since Fall 2016.
- Supervisor for Research Project, Antares Chen (student of Montgomery Blair High School; co-advised with David Harris), 2014-2015.
- Supervisor for Senior Research Project, Levon Mkrtchyan (student of Montgomery Blair High School), 2006.

20.8 Ph.D. Thesis-Committee Memberships

University of Maryland, College Park: Vincent Hsiao (2023), Ajaykrishnan Nageswaran (ECE, 2023), Michael Curry (2022), Xiaomin Wu (ECE, 2022), Soheil Behnezhad (2021), Jay Ghurye (2018), Sina Dehgani (2017), Soheil Ehsani (2017), Yulu Wang (2017), Kanthi Kiran Sarpatwar (2015), Vahid Liaghat (2015), Kan-Leung Cheng (2014), Rajesh Chitnis (2014), Jeongho Jeon (ECE, 2013), Shivsubramani Krishnamoorthy (2013), Eunyoung Seo (ECE, 2012), Arya Mazumdar (ECE, 2011), Barna Saha (2011), Osman Yagan (ECE, 2011), Moshe Adrian (Mathematics, 2010), Prasanth Anthapadmanabhan (ECE, 2009), Azarakhsh Malekian (2009), Brooke Shrader (ECE, 2008), Tolga Girici (ECE, 2007), Guang Han (ECE, 2007), David Omer Horvitz (2007), Jae-Yoon Jung (2007), Srinivas Kashyap (2007), Nan Liu (ECE, 2007), Abhishek Kashyap (ECE, 2006), Ruggero Morselli (2006), Tamer Nadeem (2006), Yoo-Ah Kim (2005), Andrzej Kochut (2005), Justin Yung-Chun Wan (2005), Rajiv Gandhi (2003). *Other universities:* Eunseok Kim (Rutgers University, 2022), Guanhong Pei (Virginia Tech., 2012), Deepti Chafekar (Virginia Tech., 2009), Sachin Lodha (Rutgers University, 2001), Stavros Kolliopoulos (Dartmouth College, 1998).

20.9 Other Ph.D.-Proposal Committees

University of Maryland, College Park: Christine Herlihy (2023), Tu Luan (2023), Jingling Li (2022), Faizan Wajid (2022), Shuhao Tan (2021), Duncan McElfresh (AMSC, 2019), Sheng Yang (2019), Soheil Behnezhad (2018), Alireza Farhadi (2018), Tongyang Li (2018), Adam Bender (2009), Saurabh Srivastava (2008), Guilherme Fonseca (2006), Chiu-Yuen Koo (2006), Julian Mestre (2006), Arunchandar Vasan (2006).

20.10 Honors Thesis Committee Memberships

Jonathan Roberts and Chad Rivera, Department of Government and Politics, University of Maryland, 2003.

20.11 Supervision of Software Project

Second-year project assigned to Zhang Zhang, PhD student in Applied Mathematics & Statistics, and Scientific Computation (AMSC), Fall 2013 and Spring 2014.

21 Service to the University of Maryland

21.1 Departmental Service

2013-2024 Chair, *Algorithms and Theory* Field Committee.
2023-2024 Department Council.
2023-2024 Graduate Admissions Committee.
2023-2024 Assigned mentor for two Assistant Professors.
2022-2023 Assigned mentor for an Assistant Professor.
2022-2023 Department Council.
2022-2023 Faculty Search Committee.

2022	Chair, promotion committee for Prof. Thomas Goldstein.
2022	Promotion committee for Prof. Soheil Feizi.
2021-2022	Graduate-student admissions committee.
2019	Chair, Committee for renewal of *Minker Chair* for Prof. MohammadTaghi Hajiaghayi.
2019	Farewell-event Committee for Prof. Samir Khuller.
2019	Help with Graduate-Student Applications.
2018-2019	Chair, Professorial Faculty Merit Committee.
2018-2019	Co-chair, Teaching Evaluation Committee.
2018-2019	Chair, Middle States Graduate Committee.
2018	Committee to select candidates for Google PhD Fellowship nomination.
2018	Help with Graduate-Student Applications.
2017-2018	Faculty Search Committee.
2017-2018	Co-chair, Teaching Evaluation Committee.
2017-2018	Professorial Faculty Merit Committee.
2017	Help Middle States Committee evaluate the class CMSC 250, *Discrete Structures*.
2017	Committee to select candidates for *Outstanding Graduate Student University Fellowship*.
2016-17	Chair, Faculty Search Committee.
2016–17	Co-chair, Teaching Evaluation Committee.
2016–17	Promotion Committee for Prof. Andrew Childs.
2015	Chair, APT (Appointments, Tenure, and Promotions) Committee for a senior external faculty candidate.
2015	Committee to select candidates for Larry S. Davis Dissertation Award.
2015	Co-chair, Teaching Evaluation Committee.
2015	Middle States Graduate Committee.
2015	Chair, APT (Appointments, Tenure, and Promotions) Committee for an external faculty candidate.
2014–15	Co-chair, Teaching Evaluation Committee.
2014–15	Middle States Graduate Committee.
2014	Committee to select candidates for Larry S. Davis Dissertation Award and for ACM Distinguished Dissertation Award nomination.
2014	Chair, APT (Appointments, Tenure, and Promotions) Committee for Prof. Andrew Childs.
2014	Committee to evaluate departmental nominations for Google PhD Fellowship.
2013–14	Undergraduate Awards & Scholarship Committee.
2013–14	Teaching Evaluation Committee.
2013	APT (Appointments, Tenure, and Promotions) Committee for a senior external faculty candidate.
2013	Graduate Admissions Committee.
2012–13	Chair, Graduate-student Placement Committee.
2012–13	Chair, *Algorithms and Theory* Field Committee.
2012	Committee to evaluate departmental IBM PhD Fellowship nominations.
2012	Graduate Admissions Committee.
2011–12	Teaching Evaluation Committee.
2011	Promotion Committee for Prof. MohammadTaghi Hajiaghayi.
2010–11	Teaching Evaluation Committee.

2010	Committee to select Gannon Summer Research Assistants.
2010	Promotion Committee for Prof. Mihai Pop.
2010	Graduate Admissions Committee.
2009–10	Teaching Evaluation Committee.
2008–09	Promotion Committee for Prof. Bobby Bhattacharjee.
2007–08	On sabbatical leave: no university service.
2007	Graduate Admissions Committee.
2006–07	Chair, Academic Integrity Committee.
2006–07	Chair, Teaching Evaluation Committee.
2006	Co-organizer, Panel on *The Future of Computer Science*.
2006	Graduate Program Revision Committee.
2005–06	Chair, *Algorithms and Theory* Field Committee.
2005–06	Chair, Academic Integrity Committee.
2005–06	Graduate Admissions Committee.
2005–06	Graduate Course Curriculum Committee.
2005–06	Teaching Evaluation Committee.
2004–05	Academic Integrity Committee.
2004–05	Help with Graduate-Student Applications.
2004–05	Chair, Friday Faculty Lunch Co-ordination.
2004	Coordinator, Graduate Student Orientation.
2004	Coordinator, TA Training Program.
2003–04	Academic Integrity Committee.
2003–04	Committee on Upper-Division Courses.
2003–04	Committee on Graduate Program.
2003–04	Chair, Friday Faculty Lunch Co-ordination.
2002–03	Departmental Self-Review Committee.
2002	Committee on Lower-Division Courses.
1995–98	Several departmental committees, National University of Singapore.

21.2 UMIACS Service

2019–	Member, UMIACS *Center for Machine Learning*.
2018–2019	Member, UMIACS Steering Committee.
Oct 2012	Organizer, *Maryland Theory Day*.
June 2008	Co-organizer, CHIDS-UMIACS workshop on *Health Information Management: The Next Wave*.
2005–06	Search Committee for Faculty, Center for Bioinformatics and Computational Biology.
2004–05	Search Committee for Director/Faculty, Center for Bioinformatics and Computational Biology.
Fall 2003	Co-organizer, UMIACS–Laboratory for Telecommunications Sciences (LTS) Seminar.

21.3 Service to College of Computer, Mathematical, and Natural Sciences, University of Maryland

(College previously named the College of Computer, Mathematical, and Physical Sciences.)

2008–10 College-level APT (Appointments, Tenure, and Promotions) Committee.
2004 Computer Science Chairperson Review Committee.

21.4 Service to the Graduate School, University of Maryland

2008–11 Graduate Council.

21.5 Service to General Education, University of Maryland

2014–15 I-Series Faculty Board for General Education (three semesters).

22 Outside Service

22.1 Professional Technical Committees

1. Chair of the Jury, ACM India's Annual Doctoral Dissertation Award, 2018-2019, 2019-2020, and 2020-2021.
2. Vice Chair of the *IEEE Technical Committee on the Mathematical Foundations of Computing*, January 2015 – December 2017.

22.2 Editorship

1. Associate Editor, *ACM Transactions on Algorithms* (TALG), 2020 – present (*Editor-in-Chief*, 2014 – 2020).
2. Editor, *Theory of Computing* (ToC), 2020 – present and 2005 – 2006 (*Managing Editor*, 2006 – 2019).
3. Editor, *Journal of the Indian Institute of Science*, 2018 – present.
4. Associate Editor, *Networks*, 2006 – 2019. (Stepped down in 2019.)
5. Associate Editor, *Journal of Computer and System Sciences* (JCSS), 2004 – 2014. (Stepped down in 2014.)
6. Editor, *Journal of Discrete Algorithms* (JDA), 2004 – 2012. (Stepped down in 2012.)
7. Guest editor (along with A. M. Frieze, R. D. Kleinberg, C. Peikert, A. Russell, and L. J. Schulman), special issue of the *SIAM Journal on Computing* (SICOMP), Vol. 42, Issue 3, 2013, devoted to selected papers from the *Forty-Second Annual ACM Symposium on Theory of Computing* (STOC 2010).

8. Guest editor (along with P. Sanders and B. Voecking), special issue of the journal *Theory of Computing Systems* (TOCS, formerly *Mathematical Systems Theory*), Volume 39, Number 6, 2006, devoted to selected papers from the *Sixteenth Annual ACM Symposium on Parallel Algorithms and Architectures* (SPAA 2004).

9. Guest editor (along with S. Khanna), special issue of the *Journal of Computer and System Sciences* (JCSS), Volume 69, Number 3, 2004, devoted to selected papers from the *Thirty-Fifth Annual ACM Symposium on Theory of Computing* (STOC 2003).

22.3 Program Committee Memberships

1. *SIAM Conference on Applied and Computational Discrete Algorithms* (ACDA), Seattle, USA, 2023.

2. *ACM International Conference on Measurement and Modeling of Computer Systems* (SIGMETRICS), Orlando, USA, 2023.

3. Area Chair, *Thirty-Sixth Conference on Neural Information Processing Systems* (NeurIPS), New Orleans, USA, 2022.

4. Area Chair, *Tenth International Conference on Learning Representations* (ICLR), 2022. (Conference held virtually.)

5. *Thirty-Third Annual ACM-SIAM Symposium on Discrete Algorithms* (SODA), Alexandria, VA, USA, 2022. (Conference held virtually.)

6. Area Chair, *Ninth International Conference on Learning Representations* (ICLR), Vienna, Austria, 2021. (Conference held virtially due to COVID-19.)

7. Area Chair, *Thirty-seventh International Conference on Machine Learning* (ICML), Vienna, Austria, 2020. (Conference held virtially due to COVID-19.)

8. Senior Program Committee, *Thirty-Fourth AAAI Conference on Artifical Intelligence* (AAAI), New York, USA, 2020.

9. *Ninth International Conference on Fun with Algorithms* (FUN), Sardinia, Italy, 2018.

10. *Thirty-First International Symposium on Distributed Computing* (DISC), Vienna, Austria, 2017.

11. *Twenty-Eighth ACM Symposium on Parallelism in Algorithms and Architectures* (SPAA), Asilomar, USA, 2016.

12. *Seventeenth International Workshop on Approximation Algorithms for Combinatorial Optimization Problems* (APPROX), Barcelona, Spain, 2014.

13. *Thirty-First Annual ACM Symposium on Principles of Distributed Computing* (PODC), Madeira, Portugal, 2012.

14. *Twenty-Third Annual ACM-SIAM Symposium on Discrete Algorithms* (SODA), Kyoto, Japan, 2012.

15. *Thirty-First Annual Conference on Foundations of Software Technology and Theoretical Computer Science* (FST & TCS), Mumbai, India, 2011.

16. *Thirtieth IEEE Conference on Computer Communications* (INFOCOM), Shanghai, China, 2011.

17. *Forty-Second Annual ACM Symposium on Theory of Computing* (STOC), Boston, USA, 2010.

18. *Twenty-Ninth IEEE Conference on Computer Communications* (INFOCOM), San Diego, USA, 2010.

19. *Sixth IEEE International Conference on Distributed Computing in Sensor Systems* (DCOSS), Santa Barbara, USA, 2010.

20. *Twenty-Eighth Annual ACM Symposium on Principles of Distributed Computing* (PODC), Calgary, Canada, 2009.

21. *Genetic and Evolutionary Computation Conference* (GECCO), Montréal, Canada, 2009.

22. *Twenty-Eighth IEEE Conference on Computer Communications* (INFOCOM), Rio de Janeiro, Brazil, 2009.

23. *Twenty-Seventh Annual Conference on Foundations of Software Technology and Theoretical Computer Science* (FST & TCS), Delhi, India, 2007.

24. *Eleventh International Workshop on Randomization and Computation* (RANDOM), Princeton, USA, 2007.

25. *Joint Workshop on Foundations of Mobile Computing* (DIAL-M-POMC), co-located with ACM MOBICOM, Cologne, Germany, 2005.

26. *Sixteenth ACM Symposium on Parallelism in Algorithms and Architectures* (SPAA), Barcelona, Spain, 2004.

27. *Thirty-Fifth Annual ACM Symposium on Theory of Computing* (STOC), San Diego, USA, 2003.

28. *Sixth International Workshop on Discrete Algorithms and Methods for Mobile Computing and Communications* (DIAL M for Mobility), Atlanta, USA, 2002.

29. *Twenty-First Annual Conference on Foundations of Software Technology and Theoretical Computer Science* (FST & TCS), Bangalore, India, 2001.

30. *Fourth International Workshop on Discrete Algorithms and Methods for Mobile Computing and Communications* (DIAL M for Mobility), Boston, USA, 2000.

31. *Fourth International Workshop on Randomization and Approximation Techniques in Computer Science* (RANDOM), Geneva, Switzerland, 2000.

32. *Asian Computing Science Conference* (ASIAN), Phuket, Thailand, 1999.

33. *Tenth Annual International Symposium on Algorithms and Computation* (ISAAC), Chennai, India, 1999.

34. *Ninth Annual ACM-SIAM Symposium on Discrete Algorithms* (SODA), San Francisco, USA, 1998.

35. *Sixth Scandinavian Workshop on Algorithm Theory* (SWAT), Stockholm, Sweden, 1998.

36. *Eighteenth Annual Conference on Foundations of Software Technology and Theoretical Computer Science* (FST & TCS), Chennai, India, 1998.

37. *Seventh Annual International Symposium on Algorithms and Computation* (ISAAC), Osaka, Japan, 1996.

22.4 Conference Organization

- Co-organizer, affiliated event on "Integrating Topics from Computational Epidemiology into Computer Science Courses", SIGCSE (ACM Special Interest Group on Computer Science Education) Technical Symposium, 2024.
- Co-organizer, conference in honor of Prof. David Shmoys' 60th birthday, Cornell Tech., New York City, USA, 2020.
- Co-organizer, *Random Roads*, a conference in honor of Prof. Joel Spencer's 70th birthday, New York University, USA, 2016.
- Co-organizer, Workshop on "Recent Advances on the Lovász Local Lemma" associated with the *ACM Symposium on Theory of Computing*, 2014.
- Organizer, *Maryland Theory Day*, University of Maryland, 2012.
- Organizer and Chair, Session on Wireless Networking, *Twentieth International Symposium on Mathematical Programming* (ISMP), Chicago, USA, 2009.
- Chair, Local Organizing Committee, *Annual ACM Symposium on Theory of Computing* (STOC), Bethesda, MD, USA, 2009.
- Co-organizer, CHIDS-UMIACS workshop on *Health Information Management: The Next Wave*, June 2008.
- Co-organizer, *Workshop on Wireless and Sensor Networking*, Bertinoro, Italy, August 2007.
- Co-organizer, Conference on *Probabilistic Combinatorics & Algorithms* in honor of Prof. Joel Spencer's 60th birthday. DIMACS Center, Piscataway, USA, April 2006.
- Co-organizer, Workshop on *Algorithms in Networking*, co-located with the *Annual Conference on Foundations of Software Technology and Theoretical Computer Science* (FST & TCS), Hyderabad, India, December 2005.

- Member, Local Organizing Committee, *Annual ACM Symposium on Theory of Computing* (STOC), Baltimore, USA, May 2005.
- Co-organizer, *Workshop on Random Graphs and Randomized Algorithms*, Bertinoro, Italy, May 2002.
- Co-organizer, *DIMACS Mini-Workshop on Quality of Service Issues in the Internet*, DIMACS Center, Piscataway, USA, February 2001.
- Chair, Session on *Data Network Routing and Modeling*, Fifth INFORMS Telecommunications Conference (BOCA 2000), Boca Raton, USA, March 2000.
- Organizer and one of the speakers, *Symposium on Parallel & Distributed Computing and Networks*, National University of Singapore, July 1998. (Speakers from Telcordia Technologies– formerly Bellcore, Carnegie-Mellon University, Harvard University, MIT, National University of Singapore, Rice University, University of Illinois at Urbana-Champaign, and the University of Texas at Austin.)

22.5 Reviewing and Related Panels/Workshops

- Panelist, Amazon Science Panel, *Ninth International Conference on Learning Representations* (ICLR), May 2021.
- Invited participant, *Adobe Data Science Symposium*, Adobe, San Jose, California (2017, 2016, 2015, and 2014). Also, one of the speakers in 2015.
- Invited participant, National Science Foundation Workshop on *Future Directions in Wireless Networking*, November 2013.
- Invited participant, National Science Foundation Workshop on *The Science of Power Management*, April 2009.
- Invited speaker and participant, National Science Foundation Workshop on *Bridging the Gap between Wireless Networking Technologies and Advances at the Physical Layer*, August 2007.
- Invited participant for External Partners discussion, Scientific Review of the Virginia Bioinformatics Institute, June 2007.
- National Science Foundation Award Panels: fourteen panels.
- Proposal reviews: National Science Foundation *ad hoc* reviews, U.S. Army Research Office, NSERC (Canada), Austrian Science Fund, European Research Council, Israel Science Foundation, US-Israel Binational Science Foundation, Indo-U.S. Science & Technology Forum, John Simon Guggenheim Memorial Foundation, Indo-Swiss Joint Research Programme, Qatar National Research Fund, and research proposal submitted to the National University of Singapore.
- External evaluation of Ph.D. theses submitted to other institutions: two.

- External reviewer for a senior researcher, HP Labs (formerly *DEC Systems Research Center*), Palo Alto, USA, 1998.

- Refereed submissions for various journals including *ACM Transactions on Algorithms*, *ACM Transactions on Computer Systems*, *Algorithmica*, *Combinatorica*, *Discrete Applied Mathematics*, *Distributed Computing*, *Electronic Journal of Combinatorics*, *European Journal of Combinatorics*, *IEEE Journal on Selected Areas in Communications*, *IEEE Transactions on Computers*, *IEEE Transactions on Parallel and Distributed Systems*, *Information and Computation*, *Information Processing Letters*, *Journal of the ACM*, *Journal of Algorithms*, *Journal of Computer and System Sciences*, *Journal of Parallel and Distributed Computing*, *Journal of the Royal Society Interface*, *Mathematical Methods of Operations Research*, *Mathematical Programming*, *Mathematics of Operations Research*, *Operations Research*, *PLOS ONE*, *Proc. National Academy of Sciences*, *Probability Theory and Related Fields*, *Random Structures & Algorithms*, *Science*, *SIAM Journal on Computing*, *SIAM Journal on Discrete Mathematics*, *Statistics & Probability Letters*, *Theoretical Computer Science*, *Theory of Computing*, and *Theory of Computing Systems*.

22.6 Community and Outreach Activities

- Gave approximately two hours of lectures on *dependent rounding and fairness in ML* at the *Program in Algorithmic and Combinatorial Thinking* (PACT) online, July 2022. This high-quality program is run for selected high-school- and college- students (based in several countries) by Prof. Rajiv Gandhi of Rutgers University.

- Gave approximately two hours of lectures on *derandomization* at the *Program in Algorithmic and Combinatorial Thinking* (PACT) online, July 2021. This high-quality program is run for selected high-school- and college- students (based in several countries) by Prof. Rajiv Gandhi of Rutgers University.

- Gave approximately six hours of lectures on the *Lovász Local Lemma* at the *Program in Algorithmic and Combinatorial Thinking* (PACT) at Princeton University, July 2017. This high-quality program is run for selected high-school- and college- students by Prof. Rajiv Gandhi of Rutgers University.

- Gave approximately seven hours of lectures (primarily on the *Lovász Local Lemma and on Balls-and-Bins Processes*) at the NSF-supported *Program in Algorithmic and Combinatorial Thinking* (PACT) at Princeton University, July 2014. This high-quality program is run for selected high-school- and college- students by Prof. Rajiv Gandhi of Rutgers University.

- Prepared/bought and served dinner approximately once a month at a homeless-women's shelter in Rockville, Maryland, 2005–present.

- Volunteer mentor for an undergraduate student, *Achieving College Excellence* (ACE) Program (http://www.omse.umd.edu/achieving-college-excellence-(ace).html) for students from under-represented groups at the University of Maryland, 2009–2010.

- Lectured on *Mathematics for the Information Age* at the Minnesota State Community and Technical College, August 2009.

- Volunteer for free Medical Camp in inner-city Baltimore, 2008.
- Lectured on algorithmic ideas underlying information security and web-search, *Passport* summer program for high-school students, University of Maryland, 2005.
- Co-ordinator for DOOR, a program supported by ACM, IEEE and SIAM to contribute selected conference proceedings to academic institutions in developing countries, 1993-94.

23 Recent Consulting

Research labs and technology companies including Atomic Mole, EnvIO Networks, Google, Los Alamos National Laboratory, Microsoft Research (Redmond), Navigation Technologies, nference.ai, and Veveo, Inc.

Data Science Advisory Board, Janssen Research & Development LLC, 2019 (stepped down in 2019 in order to start my *Amazon Scholar* position). On the *Board of Advisors* for ZeroFOX, Inc., 2013–2016.