

JONATHAN ULLMAN

Curriculum Vitae
August 2020

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RESEARCH GOALS

My research is about how to use data *robustly*, *reliably*, and *responsibly*. I aim to build firm foundations for the field, but with a focus on the questions that will be critical for real-world systems, which I study using a mix of tools from algorithms, cryptography, security, machine learning, and statistics.

EDUCATION

- Doctor of Philosophy in Computer Science** 08/2009 – 06/2013
Harvard University School of Engineering and Applied Science
Thesis Title: *Privacy and the Complexity of Simple Queries*
Thesis Advisor: Salil P. Vadhan
- Bachelor of Science and Engineering in Computer Science** 08/2004 – 05/2008
Graduated *magna cum laude*

EMPLOYMENT HISTORY

- Assistant Professor** 08/2015 – Current
Khoury College of Computer and Information Sciences
Northeastern University
- Junior Fellow** 07/2014 – 07/2015
Simons Society of Fellows
Host: Rocco Servedio, Columbia University
- Postdoctoral Fellow** 06/2013 – 06/2014
Center for Research on Computation and Society
Harvard University
- Research Intern** 08/2011 – 12/2011
Microsoft Research SVC
Host: Cynthia Dwork

HONORS AND AWARDS

- NSF CAREER Award** 02/2018
Project Title: *A Stable Foundation for Trustworthy Data Analysis*
- Ruth and Joel Spira Outstanding Teacher Award** 09/2019
Awarded annually to a faculty member in the College of Computer Sciences
- Google Faculty Research Award** 02/2018
Project Title: *Distributed Differential Privacy Beyond Local Protocols*

PUBLICATIONS

EXECUTIVE SUMMARY

Google Scholar Data (07/2020): 2,002 citations, h -index 23

MANUSCRIPTS

- [1] Matthew Jagielski, Jonathan Ullman, and Alina Oprea. Auditing differentially private machine learning: How private is private SGD? *arXiv preprint arXiv:2006.07709*, 2020. In Submission.
- [2] Sourav Biswas, Yihe Dong, Gautam Kamath, and Jonathan Ullman. COINPRESS: Practical private mean and covariance estimation. *arXiv preprint arXiv:2006.06618*, 2020. In Submission.
- [3] Clément L. Canonne, Gautam Kamath, Audra McMillan, Jonathan Ullman, and Lydia Zakyntinou. Private identity testing for high dimensional distributions. *arXiv preprint arXiv:1905.11947*, 2019. In Submission.
- [4] Thomas Steinke and Jonathan Ullman. Subgaussian tail bounds via stability arguments. *arXiv preprint arXiv:1701.03493*, 2017. In Submission.

CONFERENCE PUBLICATIONS (REVERSE CHRONOLOGICAL ORDER)

- [5] Albert Cheu, Adam Smith, and Jonathan Ullman. Manipulation attacks in local differential privacy. In *IEEE Security & Privacy, IEEE S&P '21*, San Francisco, CA, USA, 2021. IEEE. In Press.
- [6] Gautam Kamath, Vikrant Singhal, and Jonathan Ullman. Private mean estimation of heavy-tailed distributions. In *Annual Conference on Learning Theory, COLT '20*, pages 2204–2235, Vienna, Austria, 2020. PMLR.
- [7] Raef Bassily, Albert Cheu, Shay Moran, Aleksandar Nikolov, Jonathan Ullman, and Zhiwei Steven Wu. Private query release assisted by public data. In *International Conference on Machine Learning, ICML '20*, pages 6066–6074, Vienna, Austria, 2020. PMLR.
- [8] Alexander Edmonds, Aleksandar Nikolov, and Jonathan Ullman. The power of factorization mechanisms in local and central differential privacy. In *ACM Symposium on Theory of Computing, STOC '20*, pages 425–438, Chicago, IL, USA, 2020. ACM.
- [9] Huy Le Nguyen, Jonathan Ullman, and Lydia Zakyntinou. Efficient private algorithms for learning halfspaces. In *International Conference on Algorithmic Learning Theory, ALT '20*, pages 704–724, San Diego, CA, USA, 2020. PMLR.
- [10] Gautam Kamath, Or Sheffet, Vikrant Singhal, and Jonathan Ullman. Differentially private algorithms for learning mixtures of well separated gaussians. In *Annual Conference on Neural and Information Processing Systems, NeurIPS '19*, pages 168–180, Vancouver, Canada, 2019.
- [11] Adam Sealfon and Jonathan Ullman. Efficiently Estimating Erdős-Rényi Graphs with Node Differential Privacy. In *Annual Conference on Neural and Information Processing Systems, NeurIPS '19*, pages 3765–3775, Vancouver, BC, Canada, 2019.

- [12] Jeffrey Champion, Abhi Shelat, and Jonathan Ullman. Securely sampling biased coins with applications to differential privacy. In *ACM Conference on Computer and Communications Security, CCS'19*, pages 603–614, London, UK, 2019. ACM.
- [13] Matthew Jagielski, Michael Kearns, Jieming Mao, Alina Oprea, Aaron Roth, Saeed Sharifi-Malvajerdi, and Jonathan Ullman. Differentially private fair classification. In *International Conference on Machine Learning, ICML'19*, pages 3000–3008, Long Beach, CA, USA, 2019. PMLR.
- [14] Gautam Kamath, Jerry Li, Vikrant Singhal, and Jonathan Ullman. Privately learning high dimensional distributions. In *Annual Conference on Learning Theory, COLT '19*, pages 1853–1902, Phoenix, AZ, USA, 2019. PMLR.
- [15] Clément Canonne, Gautam Kamath, Audra McMillan, Adam Smith, and Jonathan Ullman. The structure of optimal private tests for simple hypotheses. In *ACM Symposium on the Theory of Computing, STOC '19*, pages 310–321, Phoenix, AZ, USA, 2019. ACM.
- [16] Albert Cheu, Adam Smith, Jonathan Ullman, David Zeber, and Maxim Zhilyaev. Distributed differential privacy via shuffling. In *Annual Conference on the Theory and Applications of Cryptographic Techniques, EUROCRYPT '19*, pages 375–403, Darmstadt, Germany, 2019. Springer.
- [17] Matthew Joseph, Aaron Roth, Jonathan Ullman, and Bo Waggoner. Local differential privacy for evolving data. In *Annual Conference on Neural and Information Processing Systems, NeurIPS '18 Spotlight Presentation*, pages 2381–2390, Montreal, Canada, 2018.
- [18] Kobbi Nissim, Adam Smith, Thomas Steinke, Uri Stemmer, and Jonathan Ullman. The limits of post-selection generalization. In *Annual Conference on Neural and Information Processing Systems, NeurIPS '18*, pages 6402–6411, Montreal, Canada, 2018.
- [19] Albert Cheu, Ravi Sundaram, and Jonathan Ullman. Skyline identification in multi-armed bandits. In *IEEE International Symposium on Information Theory, ISIT '18*, pages 1006–1010, Vail, CO, USA, 2018. IEEE.
- [20] Lucas Kowalczyk, Tal Malkin, Jonathan Ullman, and Daniel Wichs. Hardness of non-interactive differential privacy from one-way functions. In *Annual International Cryptology Conference, CRYPTO '18*, pages 437–466, Santa Barbara, CA, USA, 2018. Springer.
- [21] Thomas Steinke and Jonathan Ullman. Tight lower bounds for differentially private selection. In *IEEE Symposium on Foundations of Computer Science, FOCS '17*, pages 552–563, Berkeley, CA, USA, 2017. IEEE.
- [22] Piotr Indyk, Sepideh Mahabadi, Ronitt Rubinfeld, Jonathan Ullman, Ali Vakilian, and Anak Yodpinyanee. Fractional set cover in the streaming model. In *International Workshop on Approximation Algorithms for Combinatorial Optimization Problems, APPROX '17*, pages 12:1–12:20, Berkeley, CA, USA, 2017.

- [23] Mitali Bafna and Jonathan Ullman. The price of selection in differential privacy. In *Annual Conference on Learning Theory, COLT '17*, pages 151–168, Amsterdam, The Netherlands, 2017. PMLR.
- [24] Aaron Roth, Aleksandrs Slivkins, Jonathan Ullman, and Zhiwei Steven Wu. Multidimensional dynamic pricing for welfare maximization. In *ACM Conference on Economics and Computation, EC '17*, pages 519–536, Cambridge, MA, USA, 2017. ACM.
- [25] Mark Bun, Thomas Steinke, and Jonathan Ullman. Make up your mind: The price of online queries in differential privacy. In *Proceedings of the 28th Annual ACM-SIAM Symposium on Discrete Algorithms, SODA '17*, pages 1306–1325, Philadelphia, PA, USA, 2017. SIAM.
- [26] Ryan Rogers, Aaron Roth, Jonathan Ullman, and Salil Vadhan. Privacy odometers and filters: Pay-as-you-go composition. In *Annual Conference on Neural Information Processing Systems, NeurIPS '16*, pages 1921–1929, Barcelona, Spain, 2016.
- [27] Lucas Kowalczyk, Tal Malkin, Jonathan Ullman, and Mark Zhandry. Strong hardness of privacy from weak traitor tracing. In *International Conference on Theory of Cryptography, TCC '16b*, pages 659–689, Beijing, China, 2016. Springer.
- [28] Edo Liberty, Michael Mitzenmacher, Justin Thaler, and Jonathan Ullman. Space lower bounds for itemset frequency sketches. In *ACM Symposium on Principles of Database Systems, PODS '16*, pages 441–454, San Francisco, CA, USA, 2016. ACM.
- [29] Raef Bassily, Kobbi Nissim, Adam Smith, Thomas Steinke, Uri Stemmer, and Jonathan Ullman. Algorithmic stability for adaptive data analysis. In *ACM Symposium on the Theory of Computing, STOC '16*, pages 1046–1059, Cambridge, MA, USA, 2016. ACM.
- [30] Aaron Roth, Jonathan Ullman, and Zhiwei Steven Wu. Watch and learn: Optimizing from revealed preferences feedback. In *ACM Symposium on the Theory of Computing, STOC '16*, pages 949–962, Cambridge, MA, USA, 2016. ACM.
- [31] Cynthia Dwork, Adam Smith, Thomas Steinke, Jonathan Ullman, and Salil Vadhan. Robust traceability from trace amounts. In *IEEE Symposium on Foundations of Computer Science, FOCS '15*, pages 650–669, Berkeley, CA, USA, 2015. IEEE.
- [32] Thomas Steinke and Jonathan Ullman. Interactive fingerprinting codes and the hardness of preventing false discovery. In *Annual Conference on Learning Theory, COLT '15*, pages 1588–1628, Paris, France, 2015. PMLR.
- [33] Jonathan Ullman. Private multiplicative weights beyond linear queries. In *ACM Symposium on Principles of Database Systems, PODS '15*, pages 303–312, Melbourne, Australia, 2015. ACM.
- [34] Pavel Hubáček, Moni Naor, and Jonathan Ullman. When can limited randomness be used in repeated games? In *IACR International Symposium on Algorithmic Game Theory, SAGT '15*, pages 259–271, Saarbrücken, Germany, 2015. Springer.

- [35] Ryan M. Rogers, Aaron Roth, Jonathan Ullman, and Zhiwei Steven Wu. Inducing approximately optimal flow using truthful mediators. In *ACM Conference on Economics and Computation*, EC '15, pages 471–488, Portland, OR, USA, 2015. ACM.
- [36] Moritz Hardt and Jonathan Ullman. Preventing false discovery in interactive data analysis is hard. In *IEEE Annual Symposium on Foundations of Computer Science*, FOCS '14, pages 454–463, Philadelphia, PA, USA, 2014. IEEE.
- [37] Justin Hsu, Aaron Roth, Tim Roughgarden, and Jonathan Ullman. Privately solving linear programs. In *International Colloquium on Automata, Languages, and Programming, Track A*, ICALP(A) '14, pages 612–624, Copenhagen, Denmark, 2014. Springer.
- [38] Karthekeyan Chandrasekaran, Justin Thaler, Jonathan Ullman, and Andrew Wan. Faster private release of marginals on small databases. In *ACM Conference on Innovations in Theoretical Computer Science*, ITCS '14, pages 287–402, Princeton, NJ, USA, 2014. ACM.
- [39] Michael Kearns, Mallesh M. Pai, Aaron Roth, and Jonathan Ullman. Mechanism design in large games: incentives and privacy. In *ACM Conference on Innovations in Theoretical Computer Science*, ITCS '14, pages 403–410, Princeton, NJ, USA, 2014. ACM.
- [40] Mark Bun, Jonathan Ullman, and Salil Vadhan. Fingerprinting codes and the price of approximate differential privacy. In *Annual ACM Symposium on the Theory of Computing*, STOC '14, pages 1–10, New York, NY, USA, 2014. ACM.
- [41] Justin Hsu, Aaron Roth, and Jonathan Ullman. Differential privacy for the analyst via private equilibrium computation. In *ACM Symposium on the Theory of Computing*, STOC '13, pages 341–350, Palo Alto, CA, USA, 2013. ACM.
- [42] Jonathan Ullman. Answering $n^{2+o(1)}$ counting queries with differential privacy is hard. In *ACM Symposium on the Theory of Computing*, STOC '13, pages 361–370, Palo Alto, CA, USA, 2013. ACM.
- [43] Justin Thaler, Jonathan Ullman, and Salil P. Vadhan. Faster algorithms for privately releasing marginals. In *International Colloquium on Automata, Languages, and Programming, Track A*, ICALP(A) '12, pages 810–821, Warwick, UK, 2012. Springer.
- [44] Anupam Gupta, Aaron Roth, and Jonathan Ullman. Iterative constructions and private data release. In *IACR International Conference on Theory of Cryptography*, TCC '12, pages 339–356, Taormina, Italy, 2012. Springer.
- [45] Anupam Gupta, Moritz Hardt, Aaron Roth, and Jonathan Ullman. Privately releasing conjunctions and the statistical query barrier. In *ACM Symposium on Theory of Computing*, STOC '11, pages 803–812, San Jose, CA, USA, 2011. ACM.
- [46] Jonathan Ullman and Salil P. Vadhan. PCPs and the hardness of generating private synthetic data. In *IACR International Conference on Theory of Cryptography*, TCC '11, pages 400–416, Providence, RI, USA, 2011. Springer.

- [47] Shiva Prasad Kasiviswanathan, Mark Rudelson, Adam Smith, and Jonathan Ullman. The price of privately releasing contingency tables and the spectra of random matrices with correlated rows. In *ACM Symposium on Theory of Computing*, STOC '10, pages 775–784, Cambridge, MA, USA, 2010. ACM.
- [48] Scott Duke Kominers, Mike Ruberry, and Jonathan Ullman. Course allocation by proxy auction. In *International Workshop on Internet and Network Economics*, WINE '10, pages 551–558, Stanford, CA, USA, 2010. Springer.

JOURNAL PUBLICATIONS (REVERSE CHRONOLOGICAL ORDER)

- [49] Aaron Roth, Aleksandrs Slivkins, Jonathan Ullman, and Zhiwei Steven Wu. Multidimensional dynamic pricing for welfare maximization. *ACM Transactions on Economics and Computation*, 8(1):6:1–6:35, 2020.
- [50] Mark Bun, Thomas Steinke, and Jonathan Ullman. Make up your mind: The price of online queries in differential privacy. *Journal of Privacy and Confidentiality*, 9(1):1–35, 2019.
- [51] Cynthia Dwork and Jonathan Ullman. The Fienberg problem: How to allow human interactive data analysis in the age of differential privacy. *Journal of Privacy and Confidentiality*, 8(1):1–10, 2018.
- [52] Mark Bun, Jonathan Ullman, and Salil Vadhan. Fingerprinting codes and the price of approximate differential privacy. *SIAM Journal on Computing*, 47(5):1888–1938, 2018.
- [53] Foto N. Afrati, Shantanu Sharma, Jonathan R. Ullman, and Jeffrey D. Ullman. Computing marginals using MapReduce. *Journal of Computer and System Sciences*, 94:98–117, 2018.
- [54] Malleesh M. Pai, Aaron Roth, and Jonathan Ullman. An antifolk theorem for large repeated games. *ACM Transactions on Economics and Computation (TEAC)*, 5(2):10:1–10:20, 2017.
- [55] Thomas Steinke and Jonathan Ullman. Between pure and approximate differential privacy. *Journal of Privacy and Confidentiality*, 7(2):1–20, 2016.
- [56] Pavel Hubáček, Moni Naor, and Jonathan Ullman. When can limited randomness be used in repeated games? *Theory of Computing Systems*, 59(4):722–746, 2016.
- [57] Jonathan Ullman. Answering $n^{2+o(1)}$ counting queries with differential privacy is hard. *SIAM Journal on Computing*, 45(2):473–496, 2016.
- [58] Anupam Gupta, Moritz Hardt, Aaron Roth, and Jonathan Ullman. Privately releasing conjunctions and the statistical query barrier. *SIAM Journal on Computing*, 42(4):1494–1520, 2013.

OTHER WRITINGS (REVERSE CHRONOLOGICAL ORDER)

- [59] Thomas Steinke and Jonathan Ullman. The pitfalls of average-case differential privacy. <https://differentialprivacy.org/average-case-dp/>, 2020.

- [60] Gautam Kamath and Jonathan Ullman. A primer on private statistics. *arXiv preprint arXiv:2005.00010*, 2020.
- [61] Jonathan Ullman. Technical perspective: Building a safety net for data reuse. *Communications of the ACM*, 60(4):85–85, 2017.
- [62] Cynthia Dwork, Adam Smith, Thomas Steinke, and Jonathan Ullman. Exposed! a survey of attacks on private data. *Annual Review of Statistics and Its Application*, 4:61–84, 2017.
- [63] Aaron Roth, Jonathan Ullman, and Zhiwei Steven Wu. Watch and learn: optimizing from revealed preferences feedback. *ACM SIGecom Exchanges*, 14(1):101–104, 2015.
- [64] Jonathan Ullman. Query release via online learning. *Encyclopedia of Algorithms*, pages 1–5, 2015.

FUNDING

EXECUTIVE SUMMARY

Total research funding approximately \$1.4m. NSF CAREER Award in 2018; Google Faculty Research Award in 2018.

GRANTS AND AWARDS

- NSF award #1916020** **10/2019 – 10/2021**
Project Title: *SaTC: CORE: Medium: Understanding and Mitigating the Privacy and Societal Risks of Advanced Advertising Targeting and Tracking*
Role: co-PI; joint with Alan Mislove (Northeastern) and Alexandra Korolova (USC)
Amount: \$1.2m total, \$400k for co-PI Ullman
- NSF award #1816028** **08/2018 – 08/2021**
Project Title: *SaTC: New Approaches to Decentralized Differential Privacy*
Role: PI; joint with abhi shelat (Northeastern)
Amount: \$500k total; \$250k for PI Ullman
- Google Faculty Research Award** **02/2018**
Project Title: *Distributed Differential Privacy Beyond Local Protocols*
Amount: \$65k
- NSF CAREER award #1750640** **08/2018 – 08/2023**
Project Title: *AF: A Stable Foundation for Trustworthy Data Analysis*
Amount: \$500k
- NSF award #1718088** **08/2017 – 08/2020**
Project Title: *SHF: Programming Tools for Adaptive Data Analysis*
Role: PI; joint with Marco Gaboardi (SUNY Buffalo)
Amount: \$448k total; \$224k for PI Ullman

MENTORING

POSTDOC MENTORING

- Audra McMillan** **06/2018–06/2020**

Research: differentially private statistical inference
Cybersecurity & Privacy Institute Fellow; joint with Boston University
Next Position: Research Scientist, Apple, Inc.

PHD MENTORING

- Konstantina Bairaktari** 09/2020 – Current
Co-advised with Huy Le Nguyen
- Lydia Zakyntinou** 09/2017 – Current
Research: theory of machine learning, differential privacy
Facebook Fellowship
Co-advised with Huy Le Nguyen
Expected graduation: 05/2022
- Albert Cheu** 09/2016 – Current
Research: distributed differential privacy
Expected graduation: 05/2021
- Vikrant Singhal** 09/2016 – Current
Research: differentially private statistical inference
Expected graduation: 05/2021

UNDERGRADUATE MENTORING

- Tatiana Ediger** 05/2020 – 07/2020
Northeastern undergraduate
Project: privacy attacks on linear regression
- Jeffrey Champion** 06/2017 – 12/2019
Northeastern undergraduate co-op student
Paper *Securely Sampling Biased Coins with Applications to Differential Privacy in CCS 2019*.
Next position: Ph.D. in Computer Science, University of Texas at Austin
- Mitali Bafna** 06/2016 – 12/2016
IIT Madras undergraduate
Paper *The Price of Differentially Private Selection in COLT 2017*.
Next position: Ph.D. in Computer Science, Harvard University

THESIS COMMITTEES

Giorgios Zirdelis (expected graduation Spring 2021; advisor: Daniel Wicks)
Cheng Li (graduated Fall 2019; advisor: Jay Aslam)
Adam Sealfon (graduated Summer 2019 from MIT; advisor: Shafi Goldwasser)
Chin Ho Lee (graduated Summer 2019; advisor: Emanuele Viola)
Benjamin Kreuter (graduated Spring 2018; advisor: abhi shelat)
Maryam Aziz (graduated Fall 2018; advisor: Jay Aslam)
Zahra Jafarholi (graduated Spring 2016; advisor: Daniel Wicks)

TEACHING

Northeastern University CS 3000: Algorithms & Data

Undergraduate course on algorithm design and analysis.

Formerly listed as CS 4800: Algorithms & Data

Term	Students	Instructor Rating
Spring 2018	48	4.8/5.0
Fall 2018 (Sec 01)	72	4.7/5.0
Fall 2018 (Sec 04)	38	4.5/5.0
Spring 2020	70	4.8/5.0

Northeastern University CS 7880: Rigorous Approaches to Data Privacy

New Ph.D. level topics course on differential privacy

Term	Students	Instructor Rating
Spring 2017	9	5.0/5.0

Northeastern University CS 7800: Advanced Algorithms

Ph.D. level core course on algorithm design and analysis.

Term	Students	Instructor Rating
Fall 2015	17	4.5/5.0
Fall 2016	28	4.9/5.0
Fall 2017	27	4.5/5.0

TALKS GIVEN (REVERSE CHRONOLOGICAL ORDER)

Invited Talks

Apple Privacy-Preserving Machine Learning Workshop	08/2020
IMA Workshop on Recent Themes in Resource Tradeoffs	06/2019
University of Pennsylvania Warren Center Seminar	11/2018
Banff Mathematical Foundations of Differential Privacy Workshop	05/2018
Simons Statistics, Optimization, and Uncertainty Workshop	12/2017
Simons Differential Privacy Semester Planning Workshop	05/2017
Simons Differential Privacy Semester Planning Workshop	05/2017
IAS Symposium on Four Facets of Differential Privacy	11/2016
PCMI Summer Session, the Mathematics of Data	07/2016
IHP Nexus of Information and Computation Theories	03/2016
NIPS Workshop on Adaptive Data Analysis	12/2015
Oberwolfach meeting on complexity. Invited Plenary Talk	11/2015
Theory and Practice of Differential Privacy Workshop. Invited Keynote Talk	04/2015
Charles River Privacy Day, Boston University	05/2014
Northeastern University CS Colloquium	03/2014
University of Toronto CS Colloquium	02/2014
Northwestern CS Colloquium	02/2013
USC CS Colloquium	02/2013
Simons Big Data and Differential Privacy Workshop	03/2013
Simons Workshop on the Science of Differential Privacy	02/2013
China Theory Week	10/2011

Seminar Talks

Boston University Theory of Computing Seminar.	10/2019
MIT Cryptographic and Information Security Seminar.	04/2017
UMass Amherst Database Seminar.	10/2016
MIT Theory of Computing Seminar.	10/2016
University of Warwick Theory of Computing Seminar.	04/2015
NYU Polytech Theory of Computing Seminar.	10/2014
Penn State Theory of Computing Seminar.	09/2014
MSR SVC Seminar.	11/2013
Princeton Theory of Computing Seminar.	11/2013
NYU Theory of Computing Seminar.	10/2013
Columbia University Theory of Computing Seminar.	10/2013
Boston Univeristy Theory of Computing Seminar.	02/2011
MSR New England Seminar.	11/2010
Penn State Theory of Computing Seminar.	04/2010

PROFESSIONAL ACTIVITIES

EXTERNAL ACTIVITIES

Theory and Practice of Differential Privacy Workshop

Steering Committee Co-Chair

Program Committee Chair for TPDF 2017

Guest Editor, Special issue of *Journal of Privacy and Confidentiality* for work from TPDF 2017

DifferentialPrivacy.org Blog

Co-creator and editor

Conference Program Committee and Reviewer

Program Committee, Symposium on Theory of Computing (STOC) 2015

Program Committee, Theory of Cryptography Conference (TCC) 2015

Program Committee, Innovations in Theoretical Computer Science (ITCS) 2015

Program Committee, Economics and Computation (EC) 2016

Program Committee, Theory of Cryptography Conference (TCC) 2016b

Reviewer, Neural and Information Processing Systems (NeurIPS) 2016

Reviewer, Neural and Information Processing Systems (NeurIPS) 2017

Program Committee, Conference on Artificial Intelligence and Statistics (AISTATS) 2017

Program Committee, Symposium on Discrete Algorithms (SODA) 2018

Reviewer, International Conference on Machine Learning (ICML) 2018

Program Committee, Symposium on Foundations of Computer Science (FOCS) 2018

Program Committee, Information Theoretic Cryptography (ITC) 2020

Reviewer, International Conference on Machine Learning (ICML) 2020

Program Committee, Conference on Computer and Communications Security (CCS) 2020

Reviewer Committee, Conference on Learning Theory (COLT) 2020

Program Committee, Symposium on Security and Privacy (Oakland) 2021

INTERNAL ACTIVITIES

Khoury College of Computer Science Committees

Co-organizer , Ph.D. Open House	03/2020
Representative , Ph.D. admissions committee	2019/2020 AY
Representative , Ph.D. curriculum committee	2018/2019 AY
Representative , TT hiring committee	2017/2018 AY
Representative , TT hiring committee	2016/2017 AY
Co-organizer , Ph.D. Open House	03/2016
Representative , Ph.D. admissions committee	2015/2016 AY