

Yash Deshpande

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Curriculum Vitae

Employment

- 2019–present **Institute for Data, Systems and Society, MIT, Cambridge, MA.**
Postdoctoral Associate
- 2017–Present **Department of Mathematics, MIT, Cambridge, MA.**
Instructor (Schramm Fellow)
- 2016–2017 **Microsoft Research, Cambridge, MA.**
Postdoctoral Researcher (Schramm Fellow)
- 2013 **Microsoft Research, Cambridge, MA.**
Summer Research Intern
- 2010 **Department of Electrical Engineering, Caltech, Pasadena, CA.**
Summer Undergraduate Research Fellow

Education

- 2011–2016 **Stanford University, Stanford, CA.**
Ph.D in Electrical Engineering
Advisor: Andrea Montanari
Thesis: Computational Limits in Statistical Estimation: Hidden Clique and Related Problems
- 2007–2011 **Indian Institute of Technology Bombay, India.**
B.Tech in Electrical Engineering, Minor in Computer Science

Publications

Refereed Conferences

- Y. Deshpande, A. Montanari, E. Mossel, S. Sen “Contextual Stochastic Block Models”, Spotlight at *Neural Information Processing Systems (NIPS) 2018*
- Y. Deshpande, A. Montanari, R. O’Donnell, T. Schramm, S. Sen “The threshold for refutation of NAE-3SAT”, *Symposium on Discrete Algorithms (SODA) 2018*
- Y. Deshpande, L. Mackey, V. Syrgkanis, M. Taddy, “Accurate Inference for Adaptive Linear Models”, *International Conference on Machine Learning (ICML), 2018*
- M. Erdogdu, Y. Deshpande, A. Montanari, “Inference in Graphical Models via Semidefinite Program-

ming Hierarchies", *Neural Information Processing Systems (NIPS)*, 2017

- Y. Deshpande, E. Abbe, A. Montanari, "Asymptotic Mutual Information for the Balanced Binary Stochastic Block Model", *International Symposium on Information Theory (ISIT)*, 2016
- Y. Deshpande, A. Montanari, "Improved Sum of Squares Lower Bounds for the Hidden Clique and Hidden Submatrix Problems", *Conference on Learning Theory (COLT)*, 2015
- Y. Deshpande, A. Montanari, "Sparse PCA via Covariance Thresholding", *Neural Information Processing Systems (NIPS)*, 2014
- Y. Deshpande, A. Montanari, E. Richard, "Cone-constrained Principal Component Analysis", *Neural Information Processing Systems (NIPS)*, 2014
- Y. Deshpande, A. Montanari, "Information-theoretically Optimal Sparse PCA", *International Symposium on Information Theory (ISIT)*, 2014
- Y. Deshpande, A. Montanari, "Linear Bandits in High Dimension and Recommendation Systems", *Annual Allerton Conference on Communication, Control and Computing*, 2011
- Y. Deshpande, S. R. B. Pillai, B. K. Dey, "On the Sum Capacity of Multiaccess Block-Fading Channels with Individual Side Information" *Information Theory Workshop (ITW)*, 2011

Journals

- Y. Deshpande, E. Abbe, A. Montanari, "Asymptotic Mutual Information for the Balanced Binary Stochastic Block Model", *Information and Inference, a Journal of the IMA*, 2017
- Y. Deshpande, A. Montanari, "Sparse PCA via Covariance Thresholding", *Journal of Machine Learning Research*, 2016
- Y. Deshpande, A. Montanari, "Finding Hidden Cliques of Size $\sqrt{N/e}$ in Nearly Linear Time", *Foundations of Computational Mathematics*, 2015

Preprints

- Y. Deshpande, A. Javanmard, M. Mehrabi "Online debiasing for adaptively collected high-dimensional data"

Teaching

- 18.655 Mathematical Statistics, MIT
- 18.S096 Computational Statistics, MIT
- 18.434 Seminar on Theoretical Computer Science, MIT
- 18.200 Discrete Mathematics (recitation instructor), MIT
- EE.388 Inference, Estimation and Information Processing (course assistant), Stanford

Distinctions

- AMS-Simons Travel Grant, 2018
- Schramm Postdoctoral Fellowship, 2016
- Oswald G. Villard, Jr. Fellowship, Stanford, 2011

- IIT Bombay Academic Excellence Award 2010
- INLAKS Award of Excellence 2008

Talks

- **2020** Chicago Booth School of Business, NYU Math and Data Seminar, Cornell ORIE Colloquium
- **2019** Columbia Statistics, Microsoft Research (NYC), NYU Math and Information Seminar, Allerton Conference, Cornell ORIE Young Researchers' Workshop, Duke Fuqua School of Business, Princeton EE, UC San Diego HDSI Workshop on Learning Theory (TIFR)
- **2018** Probability Seminar Harvard, INFORMS Annual Meeting
- **2017** Probability Seminar MIT, INFORMS Applied Probability Conference
- **2016** Brandeis Math, MIT IDSS, Information Theory Forum Stanford, JSM (Joint Statistical Meeting), INFORMS Annual Meeting, Allerton, Workshop on Local Algorithms (WoLA), Simons Information Theory Reunion
- **2015** EECS Berkeley, ITW (Information Theory Workshop), Allerton (Graduating Class), IMA Minnesota, COLT
- **2013** Simons Institute (Big Data All Hands)

Service

- Reviewer for
Journals: Proceedings of the National Academy of Sciences, Annals of Applied Probability, Math of Operations Research, Annals of Statistics, Journal of Machine Learning Research, Electronic Journal of Statistics, IEEE Trans. on Information Theory, Information and Inference: a journal of the IMA, Journal of Statistical Physics, IEEE Trans. on Signal Processing
Conference: Computer science: SODA, STOC, FOCS
Machine learning: ICML, NIPS, COLT, AISTATS, UAI
Information theory: ISIT, ITW
- Co-organizer, Hacking Bias in ML (MSR-NE) 2017
- Co-organizer, Workshop on Local Algorithms (MSR-NE) 2016
- Co-organizer, ISL Colloquium, Stanford

Software

- Code for papers available at <https://github.com/yash-deshpande> and bitbucket.org/yashdeshpande
- R package online debiasing: <http://faculty.marshall.usc.edu/Adel-Javanmard/OnlineDebiasing/home.html>
- Languages: Python, R

References

Available on request