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Courant Institute of Mathematical Sciences
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Address for Academic Year 2012-2013:
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Born: *November 1979, Calcutta, India.*
Citizenship: *India*
Immigration status: *Permanent Resident in the US*

Employment

Since September 2009	Associate Professor of Mathematics, Courant Institute, NYU. (Presently on leave.)
July 2009 – June 2011	Associate Professor of Statistics and Mathematics, UC Berkeley. (On leave.)
July 2006 – June 2009	Assistant Professor of Statistics, UC Berkeley.

Visiting positions

Academic year 2012-13	Visiting Associate Professor of Mathematics and Statistics, Stanford University.
May 2008	Visiting Professor of Mathematics at Université de Toulouse, France.
July 2005 – June 2006	Visiting Neyman Assistant Professor of Statistics, UC Berkeley.

Education

June 2005	Ph.D. in Statistics, Stanford University. Adviser: Persi Diaconis.
May 2002	Master of Statistics, Indian Statistical Institute, Kolkata.
May 2000	Bachelor of Statistics, Indian Statistical Institute, Kolkata.

Editorial positions

1. Editor for Sankhyā, Series A, since January 2012.
2. Associate editor for Probability Theory and Related Fields, since July 2011.
3. Associate editor for the Annals of Probability, since January 2009.
4. Associate editor for the Annales de l'Institut Henri Poincaré (B), January 2008 – March 2013.

Awards

1. 2013 Loève Prize in Probability.
2. 2013 Young Researcher Award from the International Indian Statistical Association.
3. First recipient of the Doeblin Prize in Probability, given by the Bernoulli Society with sponsorship from Springer-Verlag, 2012.
4. 2010 Rollo Davidson Prize, awarded by the Rollo Davidson Trustees, University of Cambridge.
5. 2008 Tweedie New Researcher Award, from the Institute of Mathematical Statistics.
6. Sloan Research Fellowship in Mathematics, 2007-2009.

Notable lectures

1. Invited speaker at the International Congress of Mathematicians (ICM 2014), Probability and Statistics Section, Seoul, 2014.
2. Plenary speaker at the Eastern Sectional meeting of the AMS, October 2014.
3. Invited lecturer at the Saint Flour Probability Summer School, 2014.
4. Invited lecturer at the Cornell Probability Summer School, 2012.
5. Invited speaker at the International Congress of Mathematical Physics (ICMP 2012), Aalborg, August 2012.
6. Institute of Mathematical Statistics Medallion Lecture, given at the IMS Annual Meeting/8th World Congress of Probability and Statistics, Istanbul, July 2012.
7. Plenary talk at Stochastic Processes and Applications (SPA 2009), Berlin, July 2009.
8. Plenary talk at Seminar on Stochastic Processes (SSP 2009), Stanford, March 2009.
9. Invited talk at AMS National Meeting, San Diego, January 2008.

Preprints and submitted papers (available on arXiv)

1. Minimal spanning trees and Stein's method. (with Sanchayan Sen)
2. Fluctuations of the Bose-Einstein condensate. (with Persi Diaconis)
3. Stochastic solutions of the wave equation.
4. Assumptionless consistency of the Lasso.
5. Matrix estimation by Universal Singular Value Thresholding.
6. Disorder chaos and multiple valleys in spin glasses.
7. Chaos, concentration, and multiple valleys.
8. The Ghirlanda-Guerra identities without averaging.
9. A simple invariance theorem.
10. An error bound in the Sudakov-Fernique inequality.

Publications

1. Invariant measures and the soliton resolution conjecture. To appear in *Comm. Pure Appl. Math.*
2. A note about the uniform distribution on the intersection of a simplex and a sphere. To appear in *J. Topology and Analysis.*
3. Estimating and Understanding Exponential Random Graph Models. (with Persi Diaconis) To appear in *Ann. Statist.*
4. Properties of Uniform Doubly Stochastic Matrices. (with Persi Diaconis and Allan Sly) To appear in *Ann. de l'Inst. Henri Poincaré (B).*
5. Central limit theorem for first-passage percolation time across thin cylinders. (with Partha S. Dey) *Probab. Theory Related Fields,* **156** nos. 3-4, 613–663, 2013.
6. Random Overlap Structures: Properties and Applications to Spin Glasses. (with Louis-Pierre Arguin) *Probab. Theory Related Fields,* **156** nos. 1-2, 375–413, 2013.
7. The universal relation between scaling exponents in first-passage percolation. *Ann. Math.,* **177** no. 2, 663–697, 2013.
8. The missing log in large deviations for triangle counts. *Random Structures and Algorithms,* **40** no. 4, 437–451, 2012.
9. Probabilistic methods for discrete nonlinear Schrödinger equations. (with Kay Kirkpatrick) *Comm. Pure Appl. Math.* **65** no. 5, 727–757, 2012.
10. A new approach to strong embeddings. *Probab. Theory Related Fields,* **152**, 231–264, 2012.

11. Large deviations for random matrices. (with S. R. S. Varadhan) *Comm. Stoch. Analysis,* **6** no. 1, 1–13, 2012.
12. Random multiplicative functions in short intervals. (with Kannan Soundararajan) *Int. Math. Res. Not.* **2012** no. 3, 479–492, 2012.
13. The large deviation principle for the Erdős-Rényi random graph. (with S. R. S. Varadhan) *European J. Comb.* (special issue on Homomorphisms and Limits) **32** no. 7, 1000–1017, 2011.
14. Spectral clustering and the high-dimensional Stochastic Block Model. (with Karl Rohe and Bin Yu) *Ann. Statist.* **39** no. 4, 1878–1915, 2011.
15. A combinatorial analysis of interacting diffusions. (with Soumik Pal) *J. Theoret. Probab.* **24**, 939–968, 2011.
16. Random graphs with a given degree sequence. (with Persi Diaconis and Allan Sly) *Ann. App. Probab.* **21** no. 4, 1400–1435, 2011.
17. Exponential Approximation by Exchangeable Pairs and Spectral Graph Theory. (with Jason Fulman and Adrian Roellin) *ALEA*, **8**, 1–27, 2011.
18. Non-normal approximation by Stein's Method of Exchangeable Pairs with Application to the Curie-Weiss Model. (with Qi-Man Shao) *Ann. App. Probab.* **21** no. 2, 464–483, 2011.
19. Phase Transitions in Gravitational Allocation. (with Ron Peled, Yuval Peres and Dan Romik) *Geom. Funct. Anal.,* **20**, 870–917, 2010.
20. Applications of Stein's method for concentration inequalities. (with Partha S. Dey) *Ann. Probab.,* **38** no. 6, 2443–2485, 2010.
21. Spin glasses and Stein's method. *Probab. Theory Related Fields.,* **148** nos. 3–4, 567–600, 2010.
22. Gravitational allocation to Poisson points. (with Ron Peled, Yuval Peres, and Dan Romik) *Ann. Math.,* **172** no. 1, 617–671, 2010.
23. A phase transition behavior for Brownian motions interacting through their ranks. (with Soumik Pal) *Probab. Theory Related Fields,* **147**, 123–159, 2010.
24. Central Limit Theorems for the Energy Density in the Sherrington-Kirkpatrick Model. (with Nicholas Crawford) *J. Statist. Phys.,* **137**, 639-666, 2009.
25. An observation about submatrices. (with Michel Ledoux) *Elec. Comm. Probab.,* **14**, 495-500, 2009.
26. Consistent estimates of deformed Gaussian random fields on the plane. (with Ethan Anderes) *Ann. Statist.,* **37** no. 5A, 2324–2350, 2009.
27. Fluctuations of eigenvalues and second order Poincaré inequalities. *Probab. Theory Related Fields,* **143**, 1–40, 2009.
28. Multivariate normal approximation using exchangeable pairs. (with Elizabeth Meckes) *ALEA,* **4** 257-283, 2008.
29. A new method of normal approximation. *Ann. Probab.* **36**, no. 4, 1584–1610, 2008.
30. Estimation in spin glasses: A first step. *Ann. Statist.* **35**, no. 5, 1931–1946, 2007.
31. Concentration of Haar measures, with an application to random matrices. *J. Funct. Anal.,* **245**, 379-389, 2007.
32. Stein's method for concentration inequalities. *Probab. Theory Related Fields,* **138**, 305–321, 2007.
33. A generalization of the Lindeberg principle. *Ann. Probab.,* **34**, no. 6, 2061–2076, 2006.
34. Concentration inequalities with exchangeable pairs. *Ph.D. thesis.* Stanford University, 2005.
35. Exchangeable pairs and Poisson approximation. (with Persi Diaconis and Elizabeth Meckes) *Probab. Surv.,* **2**, 64-106, 2005.

36. A new method for bounding rates of convergence of empirical spectral distributions. (with Arup Bose) *J. Theoret. Probab.*, **17** no. 4, 1003-1019, 2004.
37. Limiting spectral distributions of large dimensional random matrices. (with Arup Bose and Sreela Gangyopadhyay) *J. Indian Statist. Assoc.*, **41** no. 2, 221-259, 2003.