

SHIRSHENDU CHATTERJEE

♦ CONTACT INFORMATION

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♦ ACADEMIC DETAILS

- ▶ **Courant Institute of Mathematical Sciences**, New York University, United States
 - **Courant Instructor** (2011 - 2014).
- ▶ **Cornell University**, Ithaca NY United States
 - **Ph.D** in *Operations Research*, August 2011.
 - Thesis title: “*Analysis of Four Particle Systems*”
 - Thesis Advisor: **Prof. RICK DURRETT**
 - Concentration: *Probability and Statistics*
 - **M.S.** in *Operations Research*, May 2009.
- ▶ **Indian Statistical Institute**, Kolkata WB India
 - **Master of Statistics**, *Honors with Distinction*, May 2006.
 - Specialization: *Mathematical Statistics and Probability*.
 - Thesis Advisors: **Dr. Debasis Sengupta** and **Dr. Probal Chaudhuri**
 - Master’s Thesis: “*Statistical Learning Based on High Dimensional Data: Some Issues and Remedies for High Dimensionality in Clustering and Classification*”. Available at www.cims.nyu.edu/~chatterj/
 - **Bachelor of Statistics**, *Honors with Distinction*, May 2004.

♦ RESEARCH INTEREST

- ▶ **Probability:** *random networks, evolution of and dynamics on such networks, stochastic spatial and growth models, disordered systems, percolation, first-passage percolation* as well as the related processes that arise in applications to *biology, social science, physics, computer science* and other disciplines.
- ▶ **Statistics:** *statistical inference and statistical machine learning* problems based on *network data*, which arise in many applications.

♦ PUBLICATIONS AND WORK IN PROGRESS

1. *Thresholds for detecting trails with unknown initial location in a Gaussian environment* (with Ofer Zeitouni). In Progress.
2. *First-passage percolation on large finite graphs with heterogeneous edge-weights* (with Shankar Bhamidi and Partha S. Dey). In Progress.
3. *First-passage percolation on the Hypercube* (with Shankar Bhamidi, Partha S. Dey and Remco van der Hofstad). In progress.
4. *Dynamics of latent voters on locally tree-like random graphs* (with Rick Durrett and Junchi Li). *Near completion*. Preprint available at my website
5. *Multiple phase transitions for long-range first-passage percolation on square lattices* (with Partha S. Dey).
Submitted, 2013. Available at arxiv.org/abs/1309.5757
6. *The order-chaos phase transition for a general class of complex Boolean networks*.
Submitted, 2013. Available at arxiv.org/abs/1310.4474
7. *Jigsaw percolation: What social networks can collaboratively solve a puzzle?* (with Charles D. Brummitt, Partha S. Dey and David Sivakoff).
Submitted 2012. Available at arxiv.org/abs/1207.1927
8. *A first order phase transition in the threshold $\theta \geq 2$ contact process on random r -regular graphs and r -trees* (with Rick Durrett),
***Stochastic Processes and Their Applications* 123 (2013)**, no. 2, 561-578.
9. *Asymptotic Behavior of Aldous' Gossip Process* (with Rick Durrett),
***The Annals of Applied Probability* 21 (2011)**, no. 6, 2447-2482.
10. *Persistence of Activity in Threshold Contact Processes, an "Annealed Approximation" of Random Boolean Networks* (with Rick Durrett),
***Random Structures and Algorithms* 39 (2011)**, issue 2, 228 - 246.
11. *Contact process on random graphs with power law degree distribution has critical value 0* (with Rick Durrett),
***The Annals of Probability* 37 (2009)**, no. 6, 2322-2356.

♦ TEACHING EXPERIENCE

- **Instructor** (at the *Courant Institute of Mathematical Sciences* during Fall 2011 - 2013)
 - for the undergraduate *Calculus II* course.
- **Instructor** (at the *Dept. of OR& IE* of *Cornell University*, Summer 2009 and 2010)
 - for the course “*Introduction to Stochastic Process I*”, which is offered for Master of Engineering and senior undergraduate students and covers *discrete and continuous time Markov chains, Poisson process and renewal theory, and introduces queueing theory and Brownian motion*.
- **Teaching Assistant** (at the *Dept. of OR& IE* of *Cornell University*)
 - for the graduate courses “*Nonlinear Programming*”, during *Spring 2010*.

- for the course “*Engineering Probability and Statistics*” offered for Master of Engineering and undergraduate students, during *Fall 2008* (Head TA) and *Fall 2007*.
- for the undergraduate course “*Basic Engineering Probability and Statistics*”, during *Summer 2007*.

♦ TALKS

- *Invited talk* at Dept. of Mathematics, *University of Delaware, Newark, USA*, Jan 2014.
- *Invited talk* at Dept. of Mathematics, *University of Massachusetts, Amherst, USA*, Jan 2014.
- *Invited talk* at Dept. of Mathematics, *Iowa State University, USA*, Jan 2014.
- *Invited talk* at the Probability Seminar, Dept. of Mathematics, *University of Chicago, USA*, Dec 2013.
- *Talk* at the Probability and Mathematical Physics Seminar, Dept. of Mathematics, *New York University, USA*, Nov 2013.
- *Invited talk* at the Probability Seminar, Dept. of Mathematics and Computer Science, *Eindhoven University of Technology, The Netherlands*, June 2013.
- *Invited talk* at the Mathematical Physics and Probability Seminar, Dept. of Mathematics, *University of California, Davis, USA*, April 2013.
- *Invited talk* at the conference “*Limit Theorems in Probability*” at the *Indian Institute of Science, India*, January 2013.
- *Invited talk* at the Dynamical Systems Seminar, *Courant Institute of Mathematical Sciences, New York University, USA*, October 2012.
- *Invited talk* at the Probability Seminar, Dept. of Mathematics, *Stockholm University, Sweden*, August 2012.
- *Invited talk* at the Probability Seminar, Dept. of Statistics & Operations Research, *University of North Carolina Chapel Hill, USA*, March 2012.
- *Invited talk* at the Probability Seminar, Dept. of Mathematics, *Cornell University, USA*, April 2011.
- *Invited talk* at the *Workshop on “Dynamics on Networks”* at the *Statistical and Applied Mathematical Science Institute, USA*, March 2011.
- *Invited talk* at the Probability and Mathematical Physics seminar, *Courant Institute of Mathematical Sciences, USA*, December 2010.
- Contributed talk at the Ninth Northeast Probability Seminar, City University of New York, USA, Nov 2010.
- *Invited talk* at the Probability Seminar, Dept. of Mathematics, *Duke University, USA*, October 2010.
- Contributed poster at the Opening Workshop on Complex Networks, Statistical and Applied Mathematical Science Institute, USA, August 2010.
- *Invited talk* at the Probability Seminar, *Indian Statistical Institute (Kolkata), India*, January 2010.

- Contributed talk at the Arizona School of Analysis with Applications, USA, March 2010.
- *Invited talk* at the Probability Seminar, Dept. of Mathematics, *Cornell University, USA*, April 2009.
- Contributed talk at the Summer School in Probability, Pacific Institute of Mathematical Sciences, Canada, July 2009.
- Contributed talk at the Seminar in Stochastic Processes, Stanford University, USA, March 2009.
- Contributed talk at the Second Graduate Student Conference in Probability, University of Wisconsin Madison, USA, May 2008.
- Contributed talk at the Sixth Northeast Probability Seminar, City University of New York, USA, Nov 2007.
- *Invited talk* at *PCM International Symposium on Statistics*, *Indian Statistical Institute* (Kolkata), India, June 2006.

♦ AWARDS

- **Graduate Fellowship**, School of Operations Research & Information Engineering, Cornell University, *Aug 2006 - Jul 2007*.
- **SHUM Award**, School of Operations Research & Information Engineering, Cornell University, *Aug 2006 - Jul 2008*.
- Awards for excellent performances in B.Stat and M.Stat programs, Indian Statistical Institute, *2001-2006*.

- ♦ **REFEREEING:** papers for the Annales de l'Institut Henri Poincaré, Annals of Applied Probability, Journal of Applied Probability and Electronic Journal of Probability.

- ♦ **ORGANIZER** for the *Probability and Mathematical Physics Seminar* at the *Courant Institute of Mathematical Sciences* (during 2011 - 2014)

♦ OTHER ACHIEVEMENT

- Ranked fourth in *Regional Mathematics Olympiad* within the state of West Bengal, India, 1999-2000.
- Ranked within top ten in *Mathematics Talent Search* in the state of West Bengal, India, 2000-01.

♦ REFERENCES

Dr. Richard Timothy Durrett
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Dr. David Aldous
Professor, Dept. of Statistics
University of California, Berkeley
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Dr. Charles Newman
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New York University
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Dr. Remco van der Hofstad
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