

CURRICULUM VITAE

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EDUCATION

2004-present Department of Statistics, Stanford University, CA.

Degree pursued: Ph.D. (Expected June, 2009), Current GPA: 4.1.

2006-present Stanford University, CA.

Degree pursued: Masters in Financial Mathematics, Current GPA: 4.1.

2002-2004 Indian Statistical Institute, India.

Degree awarded: Master of Statistics, Marks secured: 87%; Class rank: 1.

1999-2002 Indian Statistical Institute, India.

Degree awarded: Bachelor of Statistics, Marks secured: 92%; Class rank: 1.

ACADEMIC HONOURS AND AWARDS

2007 Recipient of the **Teaching Award** for outstanding service as a teaching assistant given by the Department of Statistics, Stanford University.

2006 Recipient of the **Stanford Graduate Fellowship** in science and engineering.

2004 Awarded the **M.R. Iyer memorial medal** for outstanding performance (securing first rank) in Master of Statistics at the Indian Statistical Institute.

2002 Awarded the **M. R. Iyer memorial medal** for outstanding performance (securing first rank) in Bachelor of Statistics at the Indian Statistical Institute.

1998 Awarded the “**National Talent Search Scholarship**” by the Government of India. It is a prestigious award given to 750 students every year all over India.

1998 Stood first in the Regional Mathematical Olympiad at the state level in 1998. Was also selected as an **Indian National Mathematics Olympiad** awardee. Stood fourth among the thirty people selected from all over India.

1997 Stood first in the **secondary level school examination** statewide. Invited to watch the republic day parade from the Prime Minister’s box for this achievement.

RESEARCH AND PUBLICATIONS

Research interests

- Statistical methodology in **Graphical models** and **High dimensional inference**, with applications to Genomics and Finance.
- Rates of convergence of Markov chains arising from **Markov chain Monte Carlo** simulations and models in Population genetics.
- Construction of Gaussian fields from Markov chains and connections to Bayesian methodology.
- Semi-supervised learning.

Refereed publications

- Diaconis, P., **Khare, K.** and Saloff-Coste, L. (2008). Gibbs sampling, exponential families and orthogonal polynomials, *Statistical Science* **23**, 151-178.
- **Khare, K.** and Zhou, H. (2008). Rates of convergence of some multivariate Markov chains with polynomial eigenfunctions, *to appear in the Annals of Applied Probability*.

Preprints

- **Khare, K.** and Rajaratnam, B. (2008). Maximum likelihood inference in covariance graph models, *in process of submission*.
- **Khare, K.** and Rajaratnam, B. (2008). Conjugate Wishart distributions for covariance graph models. Technical Report No. 2008-11, November 2008, Department of Statistics, Stanford University, *in process of submission*.
- Diaconis, P., Freedman, D., **Khare, K.** and Saloff-Coste, L. (2008). Stochastic alternating projections, *in process of submission*.
- Diaconis, P., **Khare, K.** and Saloff-Coste, L. (2008). Gibbs sampling, conjugate priors and coupling, *submitted*.

Work in progress

- **Khare, K.** and Rajaratnam, B. (2008). Bayesian inference in covariance graph models.
- Khare, K. (2008). Dynkin's and Diaconis-Evans' constructions with sign structure.
- Khare, K. (2008). The joint distribution of occupation times of skip-free processes and a class of multivariate exponential distributions.
- Khare, K. (2008). Semi-supervised learning using reinforced random walks.

DISSERTATION

Bayesian covariance estimation in covariance graph models, constructions of Gaussian fields from Markov chains, and semi-supervised learning using reinforced random walks.

Advisor: Professor Persi Diaconis

TEACHING EXPERIENCE

- 1) Teaching Assistant for 8 quarters for various undergraduate and graduate courses in Probability and Statistics at the Department of Statistics, Stanford University. The duties included holding office hours, teaching review sessions and grading.
- 2) **Qualifying Examination Coach** for first year Ph.D. Students in Summer 2006, Summer 2007 and Summer 2008. The assignment was to help the first year Ph.D. students prepare for their Qualifying Examinations in Probability Theory, Theoretical Statistics and Applied Statistics.

TALKS AND PRESENTATIONS

- “From Markov chains to Gaussian priors and back”. Department of Statistics, Wharton School of Business. Jan 2008.
- “From Markov chains to Gaussian priors and back”. Department of Statistics, Iowa State University. Jan 2008.
- “From Markov chains to Gaussian priors and back”. Department of Statistics and Operations Research, University of North Carolina at Chapel Hill. Feb 2008.
- “From Markov chains to Gaussian priors and back”. Department of Statistics, Harvard University. Feb 2008.
- “From Markov chains to Gaussian priors and back”. Probability Seminar, Department of Statistics, University of California at Berkeley, Feb 2008.
- “Rates of convergence of some classes of Markov chains with polynomial eigenfunctions”. Probability Seminar, Department of Statistics, Stanford University. Mar 2008.
- “Rates of convergence of some classes of Markov chains with polynomial eigenfunctions”. Department of Mathematics, University of California at Davis. Sep 2008.

PROJECTS AND SUMMER PROGRAMMES

- 1) “A study of the relation between Energy Consumption and the GDP and Population of countries using country-wise data for the past twenty years.”
An individual project done as a part of the Bachelor of Statistics Curriculum.
- 2) “A study of the social impact of television.” – A class project requiring extensive sampling and data analysis, done as a part of the Bachelor of Statistics curriculum.
- 3) Attended the “National Board of Higher Mathematics Nurture Program” at the Indian Statistical Institute, Bangalore for two years (2000-2001). Select students from the Math Olympiad Training camp are invited each year. The program also involves solving challenging problems all year round.

SOFTWARE PROFICIENCY

Well-versed with the statistical package R. Have some experience working with the programming languages C++ and Fortran.

REFERENCES

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