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RESEARCH INTERESTS

- Discrete Optimization Emphasis on solution of problems using techniques from probability and statistical physics.
- Algorithms Design and analysis of algorithms in coding theory, wireless and computer networks.
- Information Theory Multi-user communication; Applications to queuing theory, load balancing, and minimum energy scheduling.

WORK EXPERIENCE

- 2007 - present Assistant Professor with Dept. of Information Engineering, CUHK
2005 - 2007 Post-Doctoral Researcher with Microsoft Research (Theory Group)
Summer 2004 Research Intern with Microsoft Research (Theory Group)

EDUCATION

- 2000 - 2005 Ph.D., Electrical Engineering Stanford, CA.
Stanford University
Advisor: Dr. Balaji Prabhakar
- 1999 - 2002 M.S., Electrical Engineering Stanford, CA.
Stanford University
- 1995 - 1999 B.Tech., Electrical Engineering Madras, India.
Indian Institute of Technology
Ranked first in class of 1999.
- 1995 - 1999 Nurture Programme in Mathematics Madras, India.
Institute of Mathematical Sciences (MATSCIENCE)

AWARDS

2004 - 2005	Microsoft Graduate Fellowship
2000 - 2004	Stanford Graduate Fellowship
1995 - 1999	Siemens and Philips India Prize Best academic record in B.Tech.(EE)
1994 - 1999	National Talent Scholarship

DISTINCTIONS

First	Indian National Mathematics Olympiad (INMO), 1994.
First	National Mathematics Olympiad Conducted by the Association of Mathematical Teachers of India (AMTI), 1994.
First	Regional Mathematics Olympiad (RMO), 1993.

TEACHING EXPERIENCE

Spring 2009	Channel Coding and Modulation (<i>scheduled</i>)
Fall 2008	Multiuser Information Theory
Fall 2007	Basic Circuit Theory
Spring 2004	Teaching Assistant for course Network Algorithms

PH.D. THESIS

Proofs of the Parisi and Coppersmith-Sorkin conjectures in the finite random assignment problem, June 2005, Stanford University.

PUBLICATIONS

- [1] R. Pan, C. Nair, B. Prabhakar, and B. Yang, "Packet dropping schemes: some examples and analysis,," *Proceedings of the 39th Annual Allerton Conference on Communication, Control and Computing*, pp. 563–572, 2001.
- [2] C. Nair, B. Prabhakar, and D. Shah, "The randomness in randomized load balancing," *Proceedings of the 39th Annual Allerton Conference on Communication, Control and Computing*, pp. 912–921, 2001.
- [3] A. El Gamal, C. Nair, B. Prabhakar, E. Uysal, and S. Zahedi, "Energy-efficient scheduling of packet transmissions over wireless networks," *Proceedings of the IEEE Infocom Conference*, vol. 3, pp. 1773–1782, June, 2002.
- [4] C. Nair, "Towards the resolution of Coppersmith-Sorkin conjectures," *Proceedings of the 40th Annual Allerton Conference on Communication, Control and Computing*, 2002.
- [5] C. Nair, B. Prabhakar, and M. Sharma, "Proofs of the Parisi and Coppersmith-Sorkin conjectures for the finite random assignment problem," *IEEE Foundations of Computer Science (FOCS)*, pp. 168–178, 2003.

- [6] C. Nair, B. Prabhakar, and M. Sharma, “A new proof of the Parisi’s conjecture for the random assignment problem,” *International Symposium on Information Theory*, p. 61, 2004.
- [7] C. Nair, E. Ordentlich, and T. Weissman, “Asymptotic filtering and entropy rate of a hidden Markov process in the rare transitions regime,” *International Symposium on Information Theory*, pp. 1838–1842, 2005.
- [8] C. Nair, B. Prabhakar, and M. Sharma, “Proofs of the Parisi and Coppersmith-Sorkin random assignment conjectures,” *Random Structures and Algorithms*, vol. 27(4), pp. 413–444, 2005.
- [9] C. Nair and A. El Gamal, “An outer bound to the capacity region of the broadcast channel,” *International Symposium on Information Theory*, pp. 2205–2209, 2006.
- [10] C. Nair and A. El Gamal, “An outer bound to the capacity region of the broadcast channel,” *IEEE Trans. Info. Theory*, vol. IT-53, pp. 350–355, January, 2007.
- [11] M. Bayati, D. Gamarnik, D. Katz, C. Nair, and P. Tetali, “Simple deterministic approximation algorithms for counting matchings,” *Proceedings of the Symposium on Theory of Computation(STOC)*, pp. 122–127, 2007.
- [12] C. Nair and A. El Gamal, “The capacity of a class of 3-receiver broadcast channels with degraded message sets,” *International Symposium on Information Theory*, pp. 1706–1710, 2008.
- [13] C. Nair and V. W. Zizhou, “On the inner and outer bounds for 2-receiver discrete memoryless broadcast channels,” *Proceedings of the ITA Workshop*, 2008.
- [14] C. Borgs, J. T. Chayes, S. Mertens, and C. Nair, “Proof of the local rem conjecture for number partitioning I: Constant energy scales,” *In Press: Random Structures and Algorithms*, 2008.
- [15] C. Borgs, J. T. Chayes, S. Mertens, and C. Nair, “Proof of the local rem conjecture for number partitioning II: Growing energy scales,” *In Press: Random Structures and Algorithms*, 2008.

Complete list of publications and preprints available at
<http://chandra.ie.cuhk.edu.hk/pub/publications.html>

REFERENCES: available on request