

SANJEEV ARORA

Curriculum Vitae, November 2010.

Born in January 1968, in India. US Citizen

Career

July'03–	Professor of Computer Science, Princeton University.
Feb.'99–June'03	Associate Professor of Computer Science, Princeton University.
Sept.'94–Jan.'99	Assistant Professor of Computer Science, Princeton University.
Other appointments	Visiting Professor, Weizmann Institute (Feb'07–June'07) Visiting researcher, Microsoft Research (Sept'06–Jan'07) Visiting Associate Professor, UC Berkeley (Sept'01–June'02).

Education

Ph.D., Computer Science, UC Berkeley, 1994. Advisor: U.V. Vazirani
S.B., Math with CS, MIT, 1990.

Professional Activities and Honors

- Best paper award, IEEE Foundations of Computer Science, 2010.
- EATCS-SIGACT Gödel prize (cowinner), 2010.
- Elected ACM Fellow, 2009.
- Founding director and lead PI, Center for Computational Intractability, 2008. (Funded in part by an NSF Expeditions in Computing grant.)
- Engineering Council (Princeton University) teaching award for Fall 2008.
- SIGACT Committee for Advancement of Theoretical CS. Member 2005-07, Chair 2007 —2010.
- Graduate mentoring award from Princeton University, 2005.
- Best paper award (cowinner), ACM Symposium on Theory of Computing, 2004.
- Invited speaker, International Symposium on Math Programming 2003.
- Distinguished Alumnus Award from UC Berkeley Computer Science Dept., 2003.
- Invited speaker, International Congress of Mathematicians, 2002.
- EATCS-SIGACT Gödel prize (cowinner), 2001.
- Codirector of DIMACS, 2000-2001 (1 term)
- Invited speaker, ACM Symposium on Theory of Computing, 1998.

- David and Lucile Packard Foundation Fellowship, 1997–2002.
- Alfred P. Sloan Fellowship, 1996.
- NSF CAREER Award for junior faculty, 1995.
- ACM Doctoral Dissertation Award (cowinner), 1995.
- IBM Graduate Fellowship, 1993.
- Ranked first in India, IIT Joint Entrance Exam, 1986.
- Member of editorial board, *Computational Complexity*, *Theory of Computing*, *SIAM J. Disc. Math*, *Journal of Combinatorial Optimization*, *Information and Computation*, *Electronic Colloquium on Computational Complexity*.
- Program Chair for *APPROX 2003* and *IEEE FOCS 2006*. Program committee member for: *ACM Symposium on Theory of Computing*, 1996, 2003, *International Computing and Combinatorics Conference*, 1997, *IEEE Foundations of Computer Science*, 2000, 2009, *Computational Complexity 2010*, *FSTCS 2010*.
- Invited speaker at *Logic Colloquium'94*, McGill Workshop on Complexity Theory, 1996, *CUNY Logic Day* 1996, *Dimacs Workshop on Networks Design*, 1997, *NYU Geometry Day*, 1997, Lecturer at IAS-Park City Summer school in Complexity Theory, 2000, *Bay Area Theory Day 2001*, *Foundations of Software Technology and Theoretical CS 2001*, *Dimacs workshop on Geometric Algorithms 2003*, *Foundations of Computation Theory 2003*, *NYU/Columbia Theory Day*, 2004, *Georgia Tech Theory Day 2010*.
- Distinguished/Colloquium speaker at: Cornell (2009) Duke (2009), U. Toronto (2008), MIT (2007), UI Urbana Champaign (2006), UW Madison (2006) TTI Chicago (2006), U. Rochester (2006), U. Pittsburgh (2005).

Selected Publications (chronological order by first publication)

1. S. Arora, T. Leighton and B. Maggs. Online Algorithms for Path Selection in a Nonblocking Network. *SIAM J. Comp.* **25**(3):600–625, 1996. (Prelim. version in ACM STOC 1990.)
2. S. Arora and S. Safra. Probabilistic Checking of Proofs: A New Characterization of NP. *Journal of the ACM* **45**(1):70–122, 1998. (Prelim. Version IEEE FOCS 1992.)
3. S. Arora, C. Lund, R. Motwani, M. Sudan, and M. Szegedy. Proof verification and intractability of approximation problems. *JACM* **45**(3):501–555, 1998. (Prelim. Version IEEE FOCS 1992.)
4. S. Arora, L. Babai, J. Stern, and Z. Sweedyk. The hardness of approximate optima in lattices, codes, and systems of linear equations. *JCSS*, 54(2):317–331, 1997. (Prelim. version in *IEEE FOCS* 1993.)
5. S. Arora, D. Karger, and M. Karpinski. Polynomial Time Approximation Schemes for Dense Instances of \mathcal{NP} -Hard Problems. *JCSS* **58** 1999. (Prelim. version in STOC 1995.)

6. S. Arora and M. Sudan. Improved low degree testing and its applications. *Combinatorica*, 2004. (Prelim version in ACM STOC 1997.)
7. S. Arora. Polynomial-time approximation schemes for Euclidean TSP and other geometric problems. *JACM* **45**(5):753–782, 1998. (Based on papers in IEEE FOCS 1996 and 1997.)
8. S. Arora, S. Rao, and P. Raghavan. Polynomial-time approximation schemes for Euclidean facility location and k-median. *Proc. ACM STOC*, 106–113, 1998.
9. S. Arora and R. Kannan. Learning mixtures of separated non-spherical gaussians. *Annals of Applied Probability*, 2005. (Prelim version in *Proc. ACM STOC* 2001.)
10. S. Arora, B. Bollobás, L. Lovász, and I. Turlakis. Proving integrality gaps without knowing the linear program. *Theory of Computing*, 2006. (Prelim version IEEE FOCS 2001.)
11. S. Arora, S. Rao, and U. Vazirani. Expander flows, geometric embeddings, and graph partitioning. *Proc. ACM STOC*, 2004.
12. M. Alekhovich, S. Arora and I. Turlakis. Towards strong nonapproximability results in the Lovász-Schrijver hierarchy. *Proc. ACM STOC* 2005.
13. S. Arora, J. Lee, and A. Naor. Euclidean distortion and Sparsest Cut. *Journal of the American Math Soc.*, 2007. (Prelim. version ACM STOC 2005.)
14. S. Arora and S. Kale. A combinatorial, primal-dual approach to semidefinite relaxations. *Proc. ACM STOC*, 2007.
15. S. Arora and B. Chazelle. The thrill is gone? *Comm. ACM*, Aug 2005.
16. S. Arora, C. Daskalakis, D. Steurer: Message passing algorithms and improved LP decoding. *Proc. ACM STOC 2009*: 3-12.
17. S. Arora, M. Brunnermeier, R. Ge: Computational Complexity and Information Asymmetry in Financial Products. *Proc. Innovations in Computer Science*, 2010.
18. S. Arora, B. Barak, and D. Steurer. Subexponential problems for unique games and related problems. *Proc. IEEE FOCS* 2010.

Ph.D. Students

Graduated: George Karakostas (McMaster University), Subhash Khot (NYU), Elad Hazan (IBM Almaden), Iannis Turlakis (U. Toronto, postdoc), Satyen Kale (Microsoft Research, postdoc), Eden Chlamtac (Weizmann, postdoc), David Steurer (Microsoft, postdoc).

Current: V. Anuradha, Chris Beck, Rong Ge Rajsekar Manokaran,, Sushant Sachdeva.