# Sanmay Das


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## Education

2001–2006 **Massachusetts Institute of Technology, Cambridge, MA**

Ph.D. in Computer Science, June 2006
Dissertation: Dealers, Insiders and Bandits: Learning and its Effects on Market Outcomes
Advisors: Profs. Tomaso Poggio and Andrew Lo
S.M. in Electrical Engineering and Computer Science, June 2003
Thesis: Intelligent Market-Making in Artificial Financial Markets
Advisor: Prof. Tomaso Poggio

1997–2001 **Harvard College, Cambridge, MA**

A.B. *magna cum laude* with highest honors in Computer Science
Honors thesis: Optimal Behavior in Group Environments
Advisors: Profs. Barbara Grosz and Avi Pfeffer

## Professional Experience

2007–present **Assistant Professor** Rensselaer Polytechnic Institute, *Troy, NY*
Department of Computer Science

2006–2007 **Postdoctoral Scholar** UC San Diego, *La Jolla, CA*
Department of Computer Science and Engineering.

2002–2006 **Research Assistant** MIT, *Cambridge, MA*
Center for Biological and Computational Learning and Laboratory for Financial Engineering.

Summer 2004 **Consultant** Bessemer Venture Partners, *Larchmont, NY*
Full-time work with a small team on the development of trading strategies for a new hedge fund.

1999–2001 **Research Assistant** Harvard University, *Cambridge, MA*
Division of Engineering and Applied Sciences.

## Teaching Experience

Fall 2007 **CSCI 6100: Machine Learning** RPI, *Troy, NY*
Designed and taught a graduate machine learning class. Focus on supervised learning, reinforcement learning, optimal stopping, and learning in societies of agents.

2004–present **Guest Lecturing**
Lectures for undergraduate artificial intelligence (UCSD, Apr. 2007), undergraduate machine learning (UCSD, Nov. 2006), graduate learning theory (MIT, Mar. 2006), and graduate artificial intelligence (MIT, Dec. 2004).

2004 **Teaching Assistant** MIT, *Cambridge, MA*
6.825: Techniques in Artificial Intelligence (Prof. Leslie Kaelbling)

2003–2004 **Undergraduate Research Supervisor** MIT, *Cambridge, MA*
With Prof. Tomaso Poggio, supervised two undergraduate students (Nidhi Sharma, Paul Chou) in MIT's Undergraduate Research Opportunities Program.

1998-2001 **Teaching Fellow** Harvard University, *Cambridge, MA*
Computer Science 181: Intelligent Machines: Perception, Learning and Uncertainty (Prof. Avi Pfeffer), Computer Science 182: Intelligent Machines: Reasoning, Actions and Plans (Prof. Barbara Grosz), Computer Science 50: Introduction to Computer Science I (Prof. Stuart Shieber)

## Awards and Honors

2001–2002 Presidential Fellow, Massachusetts Institute of Technology.

2001 Thomas T. Hoopes Prize for Excellence in Undergraduate Research for senior honors thesis, Harvard College.

2001 Nominated for the Division of Engineering and Applied Sciences Teaching Fellow Award, Harvard University.

Spring 2001 Committee on Undergraduate Education Certificate of Distinction in Teaching, Computer Science 181, Harvard University.

Fall 2000 Committee on Undergraduate Education Certificate of Distinction in Teaching, Computer Science 182, Harvard University.

## Service

2007 Program committee member, SIAM International Conference on Data Mining (2008).

2007 Review panelist for the National Science Foundation Graduate Research Fellowship Program.

2007 Grant reviewer for the US-Israel Binational Science Foundation.

2007 Textbook proposal reviewer for Cambridge University Press.

2004–present Refereeing for *Data Mining and Knowledge Discovery*, *IEEE Transactions on Knowledge and Data Engineering*, *Computational Intelligence*, *Quantitative Finance*, *Physica A*, *ACM SIGIR 2007*, *Scalable Computing: Practice and Experience*.

## Publications

### Journal Articles

[1] Sanmay Das. A learning market-maker in the Glosten-Milgrom model. *Quantitative Finance*, 5(2):169–180, April 2005.

[2] Barbara J. Grosz, Sarit Kraus, David Sullivan, and Sanmay Das. The influence of social norms and social consciousness on intention reconciliation. *Artificial Intelligence (Special Issue on Multi-Agent Systems)*, 142(2):147–177, November 2002.

### Archival Conference Papers

[3] Sanmay Das, Milton H. Saier, Jr., and Charles Elkan. Finding transport proteins in a general protein database. In *Proceedings of the Eleventh European Conference on Principles and Practice of Knowledge Discovery in Databases*, pages 54–66, Warsaw, Poland, September 2007.

[4] Sanmay Das. Learning to trade with insider information. In *Proceedings of the Ninth International Conference on Electronic Commerce*, pages 169–176, Minneapolis, MN, August 2007.

[5] Sanmay Das and Emir Kamenica. Two-sided bandits and the dating market. In *Proceedings of the Nineteenth International Joint Conference on Artificial Intelligence*, pages 947–952, Edinburgh, UK, August 2005.

[6] Sanmay Das, Barbara Grosz, and Avi Pfeffer. Learning and decision-making for intention reconciliation. In *Proceedings of the First International Joint Conference on Autonomous Agents and Multi-Agent Systems*, pages 1121–1128, Bologna, Italy, July 2002.

[7] Sanmay Das. Filters, wrappers, and a boosting-based hybrid for feature selection. In *Proceedings of the Eighteenth International Conference on Machine Learning*, pages 74–81, Williamstown, MA, June 2001.

**Submitted Papers, Technical Reports, and Theses**

[8] Sanmay Das. On agent-based modeling of complex systems: Learning and bounded rationality. Submitted, 2007.

[9] Sanmay Das. The effects of market-making on price dynamics. Submitted, 2007.

[10] Sanmay Das and John N. Tsitsiklis. When is it important to know you've been rejected? A search problem with probabilistic appearance of offers. Technical Report # 2699, Laboratory for Information and Decision Systems, Massachusetts Institute of Technology, May 2006. Submitted.

[11] Sanmay Das. *Dealers, Insiders and Bandits: Learning and its Effects on Market Outcomes*. PhD thesis, Massachusetts Institute of Technology, May 2006.

[12] Sanmay Das. Intelligent market-making in artificial financial markets. Technical Report Center for Biological and Computational Learning Memo 226 / Artificial Intelligence Lab Technical Report 2003-005, Massachusetts Institute of Technology, June 2003. MIT Master's Thesis.

[13] Sanmay Das. Optimal behavior in group environments. Undergraduate thesis, Harvard University, 2001.

## Presentations at Refereed Workshops

[1] Sanmay Das. An agent-based model of dealership markets. The International Workshop on Complex Agent-Based Dynamic Networks (CABDyN), September 2003. Oxford, UK.

[2] Sanmay Das. Learning to trade with insider information. Neural Information Processing Systems Workshop on Machine Learning in Finance, December 2005. Whistler, BC, Canada.

## Major Invited Talks

2006 Santa Fe Institute (January), University of Massachusetts, Amherst, Department of Computer Science (February), Stanford University, Graduate School of Business: Operations, Information and Technology Group (March).

2007 Stony Brook University, Department of Computer Science (March), Rensselaer Polytechnic Institute, Department of Computer Science (March), University of Washington, Department of Computer Science and Engineering (April), INFORMS Annual Meeting (AI Cluster) (November).

November 18, 2007