

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
and the Lally School of Management and Technology (by courtesy, since 2010)
Member of the Data Science Research Center
- 2011–present **Visiting Scholar** Office of the Comptroller of the Currency, *Washington, DC*
- 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.

Awards and Honors

- 2011 Co-author and advisor on one of two runners-up for the Best Student Paper Award at AAMAS.
- 2010 National Science Foundation Early Career Development Award.
- 2001 Presidential Fellow, Massachusetts Institute of Technology.
- 2001 Thomas T. Hoopes Prize for Excellence in Undergraduate Research, 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.

Funding

- 2012 Co-PI, Intelligence Advanced Research Projects Activity (IARPA) Contract (1 year, \$240,000; subject to final contracting negotiations) for the project *Network Identification in Large Semantic Databases Using Incomplete Information* (PI: Mark Goldberg, co-PIs Malik Magdon-Ismail and William Wallace).
- 2011-2015 Co-PI, National Science Foundation CDI Type II award (4 years, \$1.77 million total, \$1.51 million to RPI) for the project *Cyber Enabled Discovery System for Advanced Multi-disciplinary Study of Humanitarian Logistics for Disaster Response* (PI: Jose-Holguin Veras, co-PIs Malik Magdon-Ismail and John Mitchell, in collaboration with Tricia Wachtendorf at the University of Delaware).
- 2010-2015 PI, National Science Foundation (NSF) Early Career Development (CAREER) award (5 years, \$500,000) for the project *The Dynamics of Collective Intelligence*.
- 2009-2013 PI, US-Israel Binational Science Foundation (BSF) grant (4 years, \$104,000) with Dr. David Sarne (Bar-Ilan University) as co-PI for the project *Equilibria in Shopping-Agent Mediated Marketplaces*.
- 2009-2012 PI, National Science Foundation CCF Award (3 years, \$544,000 total, \$210,000 to RPI) for the project *Correlation Mining and its Applications in Test Cost Reduction, Yield Enhancement, and Performance Calibration in Analog/RF Circuits* (in collaboration with Yiorgos Makris at Yale University / University of Texas at Dallas) (note: managing this fund since 2010; transferred from original awardee Petros Drineas).

Service

- Program Co-Chair First Conference on Auctions, Market Mechanisms and Their Applications (AMMA 2009).
- General Co-Chair Second Conference on Auctions, Market Mechanisms and Their Applications (AMMA 2011).
- Workshops Chair 12th ACM Conference on Electronic Commerce (ACM EC 2011).
- Session Organizer "Hard Problems in Learning and Decision Making" at INFORMS 2010.
"Computational Intelligence in Financial and Prediction Markets" at INFORMS 2008.
- Program committees International Conference on Autonomous Agents and Multi-Agent Systems (AA-MAS 2012; Senior PC)
International Joint Conference on Artificial Intelligence (IJCAI 2011; Senior PC)
Conference on Auctions, Market Mechanisms, and Their Applications (AMMA 2009, 2011)
NIPS Workshop on Computational Social Science and the Wisdom of Crowds (2010)
Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2010)
ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2009)
Conference on Intelligent Data Engineering and Automated Learning (IDEAL 2008)

IEEE International Conference on Data Mining (ICDM 2008, 2009, 2010)
SIAM International Conference on Data Mining (SDM 2008)

Steering committee The Conferences on Auctions, Market Mechanisms, and their Applications (AMMA).

Doctoral Consortium Mentor AAMAS 2011: mentor to Manish Jain (USC).

Proposal reviewing Review panelist for the US National Science Foundation for both regular programs and the Graduate Research Fellowship program, proposal reviewer for the Israel Science Foundation and US-Israel Binational Science Foundation.

Other reviewing Textbook proposal reviewer for Cambridge University Press.

Paper reviewing Refereeing for many journals and conferences, including *IEEE Conference on Decision and Control*, *Data Mining and Knowledge Discovery*, *IEEE Transactions on Knowledge and Data Engineering*, *Computational Intelligence*, *Quantitative Finance*, *Physica A*.

Publications

Edited Volumes

- [1] Sanmay Das, Michael Ostrovsky, David Pennock, and Boleslaw Szymanski, editors. *Auctions, Market Mechanisms and Their Applications: Selected Papers From the First International Conference*. Springer, 2009.

Journal Articles

- [2] Elliot Anshelevich, Sanmay Das, and Yonatan Naamad. Anarchy, stability, and utopia: Creating better matchings. *Autonomous Agents and Multi-Agent Systems*, 2011. Forthcoming.
- [3] Sanmay Das and Malik Magdon-Ismael. A model for information growth in collective wisdom processes. *ACM Transactions on Knowledge Discovery from Data*, 2011. Forthcoming.
- [4] Teruhiko Yoneyama, Sanmay Das, and Mukkai Krishnamoorthy. A Hybrid Model for Disease Spread and an Application to the SARS Pandemic. *Journal of Artificial Societies and Social Simulation*, 2011. Forthcoming.
- [5] Aditya Sehgal, Sanmay Das, Keith Noto, Milton H. Saier, Jr., and Charles Elkan. Identifying relevant data for a biological database: Handcrafted rules versus machine learning. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 8(3):851–857, 2011.
- [6] Sanmay Das and John N. Tsitsiklis. When is it important to know you’ve been rejected? a search problem with probabilistic appearance of offers. *Journal of Economic Behavior and Organization*, 74:104–122, 2010.
- [7] Sanmay Das. A learning market-maker in the Glosten-Milgrom model. *Quantitative Finance*, 5(2):169–180, April 2005.
- [8] Barbara J. Grosz, Sarit Kraus, David Sullivan, and Sanmay Das. The influence of social norms and social consciousness on intention reconciliation. *Artificial Intelligence*, 142(2):147–177, November 2002.

Archival Full Conference Papers

- [9] Mithun Chakraborty, Sanmay Das, and Malik Magdon-Ismael. Near-optimal target learning with stochastic binary signals. In *Proceedings of the Twenty-Seventh Conference on Uncertainty in Artificial Intelligence*, 2011.
- [10] Meenal Chhabra and Sanmay Das. Learning the demand curve in posted-price digital goods auctions. In *Proceedings of the Tenth International Joint Conference on Autonomous Agents and Multi-Agent Systems*, pages 63–70, 2011. **Nominated for the Best Student Paper Award (one of three nominees).**

- [11] Meenal Chhabra, Sanmay Das, and David Sarne. Expert-mediated search. In *Proceedings of the Tenth International Joint Conference on Autonomous Agents and Multi-Agent Systems*, pages 415–422, 2011.
- [12] Sanmay Das and Malik Magdon-Ismael. Collective wisdom: Information growth in wikis and blogs. In *Proceedings of the ACM Conference on Electronic Commerce*, pages 231–240, 2010.
- [13] Eric Meisner, Sanmay Das, Volkan Isler, Jeffrey Trinkle, Selma Sabanovic, and Linnda R. Caporael. Predictive state representations for grounding human-robot communication. In *Proceedings of the IEEE International Conference on Robotics and Automation*, pages 178–185, 2010.
- [14] Elliot Anshelevich, Sanmay Das, and Yonatan Naamad. Anarchy, stability, and utopia: Creating better matchings. In *Proceedings of the Second Symposium on Algorithmic Game Theory (SAGT)*, pages 159–170, 2009.
- [15] Sanmay Das and Malik Magdon-Ismael. Adapting to a market shock: Optimal sequential market-making. In *Advances in Neural Information Processing Systems (NIPS)*, pages 361–368, 2008.
- [16] Sanmay Das. The effects of market-making on price dynamics. In *Proceedings of the Seventh International Joint Conference on Autonomous Agents and Multi-Agent Systems*, pages 887–894, Estoril, Portugal, May 2008.
- [17] 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.
- [18] 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.
- [19] 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.
- [20] 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.
- [21] 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.

Other Refereed Publications

- [22] Mithun Chakraborty, Sanmay Das, Allen Lavoie, Malik Magdon-Ismael, and Yonatan Naamad. Instructor rating markets. In *Proceedings of the Second Conference on Auctions, Market Mechanisms, and Their Applications*, 2011. Abstract is to appear.
- [23] Boleslaw K. Szymanski, S. Yousaf Shah, Sahin Cem Geyik, Sanmay Das, Meenal Chhabra, and Petros Zerfos. Market mechanisms for value of information driven resource allocation in sensor networks. In *Workshop Proceedings of the Ninth Annual IEEE International Conference on Pervasive Computing and Communications (PerCom Workshops)*, pages 20–25, 2011.
- [24] Elliot Anshelevich and Sanmay Das. Matching, cardinal utility, and social welfare. *ACM SIGECom Exchanges*, 9(1), 2010.
- [25] Sanmay Das and Michael Ostrovsky. Conference announcement: The Conference on Auctions, Market Mechanisms, and Their Applications (AMMA). *ACM SIGECom Exchanges*, 7(3), 2008.

Submitted Papers, Unrefereed Papers, and Theses

- [26] Meenal Chhabra, Sanmay Das, and David Sarne. Expert-mediated search. Major revision requested at *Management Science*, 2011.
- [27] Sanmay Das, Allen Lavoie, and Malik Magdon-Ismael. Pushing your point of view: Behavioral measures of manipulation in Wikipedia. *Arxiv preprint arXiv:1111.2092*, 2011.
- [28] Aseem Brahma, Sanmay Das, and Malik Magdon-Ismael. Comparing prediction market structures, with an application to market making. *Arxiv preprint arXiv:1009.1446*, 2010.
- [29] Sanmay Das. On agent-based modeling of complex systems: Learning and bounded rationality. 2007.
- [30] Sanmay Das. *Dealers, Insiders and Bandits: Learning and its Effects on Market Outcomes*. PhD thesis, Massachusetts Institute of Technology, May 2006.
- [31] 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.
- [32] Sanmay Das. Optimal behavior in group environments. Undergraduate thesis, Harvard University, 2001.

Papers in Non-Archival Refereed Workshops

- [33] Mithun Chakraborty, Sanmay Das, Allen Lavoie, Malik Magdon-Ismael, and Yonatan Naamad. Instructor rating markets. In *Workshop on Social Computing and User Generated Content (at the ACM Conference on Electronic Commerce)*, 2011.
- [34] Meenal Chhabra, Sanmay Das, and David Sarne. Bundling in expert-mediated search. In *Thirteenth International Workshop on Agent-Mediated Electronic Commerce (AMEC)*, 2011.
- [35] Sanmay Das and Malik Magdon-Ismael. Collective wisdom: Information growth in wikis and blogs. Neural Information Processing Systems (NIPS) Workshop: *Beyond Search: Computational Intelligence for the Web*, December 2008. Whistler, BC, Canada.
- [36] Sanmay Das. Learning to trade with insider information. Neural Information Processing Systems (NIPS) Workshop: *Machine Learning in Finance*, December 2005. Whistler, BC, Canada.
- [37] Sanmay Das. An agent-based model of dealership markets. The International Workshop on Complex Agent-Based Dynamic Networks (CABDyN), September 2003. Oxford, UK.

Invited Talks and Panels

- 2006 Santa Fe Institute; University of Massachusetts, Amherst, Dept. of Computer Science; Stanford University, Graduate School of Business, Operations, Information & Technology Group; Harvard University, Artificial Intelligence Group.
- 2007 Stony Brook University, Department of Computer Science; Rensselaer Polytechnic Institute, Department of Computer Science; University of Washington, Department of Computer Science and Engineering; INFORMS Annual Meeting.
- 2008 INFORMS Annual Meeting.

2010 University of Maryland (College Park), Department of Computer Science; Harvard University Economics and Computer Science Group; Yahoo! Research New York; University of Texas at Austin Learning Agents Group.

2011 University of Maryland (Baltimore County), Department of Computer Science; AAMAS Doctoral Consortium Panel; University of Michigan Information School; George Washington University, Department of Computer Science.

Advising

Primary Graduate Advisor

- Aseem Brahma (M.S. in Computer Science, 2010; now at Qualcomm)
- Mithun Chakraborty (3rd year Ph.D. student in Computer Science)
- Meenal Chhabra (3rd year Ph.D. student in Computer Science)
- Allen Lavoie (2nd year Ph.D. student in Computer Science)

Undergraduate Summer Research Advisor

- Yonatan Naamad, Class of 2011 (starting a Ph.D. in Computer Science at Princeton in the Fall of 2011) (Summers of 2008 (also with Elliot Anshelevich) and 2010)
- Matthew Gerrior, Class of 2012 (Summer 2010 (also with Elliot Anshelevich))
- Andrew Bolin, Class of 2012 (Summer 2011)

Ph.D. Committee Member

- Eric Meisner (Ph.D. in Computer Science, Spring 2009)
- Saeed Salem (Ph.D. in Computer Science, Summer 2009)
- Mohammad Al-Hasan (Ph.D. in Computer Science, Summer 2009; **SIGKDD Doctoral Dissertation Award Winner**)
- Andrey Sarayev (Ph.D. in Computer Science, Fall 2009)
- Bugra Caskurlu (Ph.D. in Computer Science, Spring 2010)
- Teruhiko Yoneyama (Ph.D. in Multidisciplinary Science, Spring 2010)
- Jon Purnell (Ph.D. in Computer Science, Fall 2010)
- Gregory Moore (Ph.D. in Math, Fall 2010)
- Christos Boutsidis (Ph.D. in Computer Science, Spring 2011)
- Ameya Hate (passed candidacy exam in Computer Science)
- Sahin Geyik (passed research exam in Computer Science)

November 23, 2011