

SATYAM MUKHERJEE

*Decision Sciences, Operations Management, and Information Systems
SME, Shiv Nadar University, India*

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Objective

- Research Interests: Science of Science, Network Science, Big Data Analytics, Science of Team Science, Computational Social Science, and Sports Analytics.

Positions

- **Associate Professor**
 - School of Management & Entrepreneurship, Shiv Nadar University: Since June 01, 2021
- **Assistant Professor**
 - Indian Institute of Management Udaipur: March 2016 – May 2021
- **Remote Visiting Scholar**
 - Kellogg School of Management and NICO: Feb 2016 – Jan 2020
- **Visiting Assistant Professor: March 01, 2017 - Feb 28, 2018**
 - Red Hat Fellow in the Research Center for Open Digital Innovation (RCODI), Purdue University
- **Post doctoral fellow: Feb 2015 – Jan 2016**
 - Northwestern Institute on Complex Systems, Northwestern University Evanston: Worked with Prof. Brian Uzzi
- **Post doctoral fellow: Feb 2012 – Jan 2015**
 - Kellogg School of Management and NICO, Northwestern University Evanston: Worked with Prof. Brian Uzzi
- **Post doctoral fellow: Feb 2010 – Jan 2012**
 - Dept. of Chemical and Biological Engineering, Northwestern University Evanston: Worked with Prof. Luís A. Nunes Amaral

Education

- **PhD: Indian Institute of Technology Madras, India : 2004-2009**
 - Thesis Title: Message transport on communication networks
 - Thesis Supervisor : Prof. Neelima Gupte
- **M Sc : University of Pune, India : 2002-2004**

- Specialization : Physics; Grade A
- Project Title : Understanding dynamical systems using fractional derivatives
- **B Sc : University of Calcutta, India : 1999-2002**
 - Specialization : Physics; First Class

Referees

- **Prof. Neelima Gupte, Department of Physics, Indian Institute of Technology Madras, Chennai India, 600036**
 - Email : gupte@physics.iitm.ac.in
- **Prof. Brian Uzzi, Kellogg School of management, Northwestern University, Evanston, IL, U.S.A.**
 - Email : buzzi@kellogg.northwestern.edu
- **Prof. Benjamin Jones, Kellogg School of management, Northwestern University, Evanston, IL, U.S.A.**
 - Email : bjones@kellogg.northwestern.edu
- **Prof. Caroline Wagner, John Glenn College of Public Affairs, The Ohio State University, United States**
 - Email : wagner.911@osu.edu

Publications

- **Do the mobility patterns for city taxicabs impact road safety?**
 - Satyam Mukherjee, and Tarun Jain
IISE Transactions
Under Production (2021)
- **Mentorship and protégé success in STEM fields**
 - Yifang Ma, Satyam Mukherjee, and Brian Uzzi
Proceedings of the National Academy of Sciences (PNAS)
DOI: 10.1038/s41562-018-0460-y (2020)
- **Social embeddedness in user innovation networks: Evidence from Stackoverflow.com**
 - Satyam Mukherjee, and Tarun Jain
Economics of Innovation and New Technology
DOI: 10.1080/10438599.2020.1792605 (2020)
- **China's scholarship shows atypical referencing patterns**
 - Caroline Wagner, Xiaojing Cai, and Satyam Mukherjee
Scientometrics DOI: <https://doi.org/10.1007/s11192-020-03579-2> (2020)
- **Novel findings rare from international collaborations**

- Caroline Wagner, Travis Whetsell, and Satyam Mukherjee
Nature Comment (2019)
- **International Research Collaboration: Novelty, Conventionality, and Atypicality in Knowledge Recombination**
 - Caroline Wagner, Travis Whetsell, and Satyam Mukherjee
Research Policy DOI: <https://doi.org/10.1016/j.respol.2019.01.002> (2019)
- **Network organization of cooperative genetic influences on morphologies of human cerebral cortex**
 - Subhadip Paul, Satyam Mukherjee, Sagnik Bhattacharyya
Journal of Neural Engineering DOI: <https://doi.org/10.1088/1741-2552/aaff85> (2019)
- **Prior Shared Success Predicts Victory in Team Competitions**
 - Satyam Mukherjee, Yun Huang, Julia Neidhardt, Brian Uzzi, and Noshir Contractor
Nature Human Behavior DOI: [10.1038/s41562-018-0460-y](https://doi.org/10.1038/s41562-018-0460-y) (2018)
- **Priority Queuing on the Docket: Universality of Judicial Dispute Resolution Timing**
 - Satyam Mukherjee, and Ryan Whalen
Frontiers in Physics <https://doi.org/10.3389/fphy.2018.00001> (2018)
- **The Nearly Universal Link Between the Age of Past Knowledge and Tomorrow's Breakthroughs in Science and Technology: The Hotspot**
 - Satyam Mukherjee, Daniel Romero, Benjamin Jones and Brian Uzzi
Science Advances **3**(4), e1601315 (2017)
- **How good are network centrality measures? Longitudinal analysis of traffic in Railway network in the United States**
 - Satyam Mukherjee
Indian Academy of Sciences Conference Series (DOI: [10.29195/iascs.01.01.0001](https://doi.org/10.29195/iascs.01.01.0001)) (2017)
- **Common Law Evolution and Judicial Impact in the Age of Information**
 - Ryan Whalen, Brian Uzzi, and Satyam Mukherjee
Elon Law Review **9**(1), 115-170 (2017)
- **Leadership Network and Team Performance in Interactive Contests**
 - Satyam Mukherjee
Social Networks **47**, 85-92 (2016)
- **Individual Performance and Leader's Laterality in Interactive Contests**
 - Satyam Mukherjee
Laterality: Assymetries of Body, Brain and Cognition, **22**(3), 362-376 (2016)
- **How Atypical Combinations of Scientific Ideas are Related to Impact: The General Case and the Case of the Field of Geography**

- Satyam Mukherjee, Brian Uzzi, Ben Jones, Mike Stringer
Knowledge and Networks Vol 11 (2016)
- **The advantage of playing home in NBA : microscopic, team-specific and evolving features**
 - H. V. Ribeiro, Satyam Mukherjee, Xiaohan Zheng
PLoS ONE 11(3): e0152440 (2016)
- **Social embeddedness in an online weight management program is linked to greater weight loss**
 - Julia Poncela-Casasnovas, Bonnie Spring, Daniel McClary, Arlen C. Moller, Rufaro Mukogo, Christine Pellegrini, Michael Coons, Miriam Davidson, Satyam Mukherjee, Luís A. Nunes Amaral
12:20140686 *Journal of Royal Society Interface* (2015)
- **A new method for Identifying Recombinations of Existing Knowledge Associated with High Impact Innovation**
 - Satyam Mukherjee, Brian Uzzi, Benjamin Jones and Mike Stringer
Journal of Product, Innovation and Management 33(2), 224–236 (2015)
- **Correlations between user voting data, budget, and box office for films in the Internet Movie Database**
 - Max Wasserman, Satyam Mukherjee, Konner Scott, Xiaohan Zeng, Filippo Radicchi, Luís A. Nunes Amaral
doi: 10.1002/asi.23213, *JASIST* (2014)
- **Emergence of overlap in ensembles of spatial multiplexes and statistical mechanics of spatial interacting networks ensembles**
 - Arda Halu, Satyam Mukherjee, Ginestra Bianconi
Phys. Rev. E 89, 012806 (2014)
- **Atypical Combinations and Scientific Impact**
 - Brian Uzzi, Satyam Mukherjee, Michael Stringer and Benjamin Jones
Science 342, 6157 (2013)
 - Won an Honorable Mention at the American Sociological Association’s prestigious Star-Nelkin award.
- **Complex Network Analysis in Cricket : Community structure, player’s role and performance index**
 - Satyam Mukherjee
Advances in Complex Systems 16, 3 (2013)
- **Quantifying individual performance in Cricket – A network analysis of Batsmen and Bowlers**
 - Satyam Mukherjee
Physica A 393, 624 (2013)

- **Statistical Analysis of the Road Network of India**
 - Satyam Mukherjee
Pramana 79, 3, 483 (2012)
- **Anomalous diffusion and long-range correlations in the score evolution of the game of Cricket**
 - Haroldo V. Ribeiro, Satyam Mukherjee and Xiao Han T. Zeng
Phys. Rev. E 86, 022102 (2012)
- **Can timeouts change the outcome of Basketball games ?**
 - Serguei Saavedra, Satyam Mukherjee and James P. Bagrow
Scientific Reports 2, 676 (2012)
- **Identifying the greatest team and captain – A complex network approach to cricket matches**
 - Satyam Mukherjee
Physica A 391, 23, 6066 (2012)
- **Statistical Characterizers of Transport in Communication Networks**
 - S. Mukherjee, N. Gupte and G. Mukherjee
Phys. Rev. E 81, 046109 (2010)
- **Queue-length Synchronization in Communication Networks**
 - S. Mukherjee and N. Gupte
Phys. Rev. E 79, 056105 (2009)
- **Gradient Mechanism in a Communication Network**
 - S. Mukherjee and N. Gupte
Phys. Rev. E 77, 036121 (2008)
- **Message Transfer in a Communication Network**
 - S. Mukherjee and N. Gupte
Pramana Vol. 70, No. 6 (2008)

Manuscripts in preparation (or submitted)

- **Dynamics of Collaboration: A Social Network Analysis of Non-State Actors in the UN Climate Change Side-Events**
 - Pradip Swarnakar, Satyam Mukherjee, and Avinash Kumar [*Under Review in Social Networks* (2020)]
- **Digital Folding in OSS Co-development: The Effect of Depth of Cohesive Involvement and Openness to Knowledge Diversity on Sustained Development Performance**
 - Satyam Mukherjee, and Sabine Brunswicker [*Inf. Sys. Res.* (round 2) (2018)]

- **Social Brokerage and the Productivity in Online Innovation Networks: Evidence from Stack Overflow**
 - Satyam Mukherjee, and Tarun Jain [*Journal of Product Innovation Management* (round 3) (2019)]
- **Evolution of Coordination Structures in OSS Development: An Exponential Random Graph Model**
 - Sabine Brunswicker, and Satyam Mukherjee [*Under Review in IEEE Trans. Soft. Eng.*] (2021)
- **From Friends to Foes: Ecosystem factor influencing the victor in team vs. team competitions**
 - Satyam Mukherjee, Yun Huang, Brian Uzzi and Noshir Contractor [*Under Review in Social Networks* (2021)]
- **Attorney Advocacy Networks: Using Docket Data to Examine the Law's Professional Structure**
 - Ryan Whalen, and Satyam Mukherjee [*Frontiers* (round 2) (2021)]
- **Investigating location effects on the restaurant quality: Evidence from Zomato.com**
 - Tarun Jain, and Satyam Mukherjee [*To be submitted in Management Science*]
- **The Dynamics of Design Microstructures in Open Collaboration: A Motif Perspective**
 - Sabine Brunswicker, and Satyam Mukherjee [*To be Submitted*]
- **Spatial and Temporal Separation in Coordination Structures in Open Source Software (OSS)**
 - Sabine Brunswicker, and Satyam Mukherjee [*Under Preparation*]

Work in News, Media

- Kellogg Insight (Jul 07 2020) *What's the Secret Ingredient to Great Mentorship?*
- Science Blog (Jun 08 2020) *Sharing of tacit knowledge is most important aspect of mentorship*
- The Economist (Oct 11 2019) *Protégés of Nobel laureates are more likely to thrive*
- The Wall Street Journal (Feb 22 2019) *The Key to Building a Successful Team*
- PhysOrg (Dec 04 2018) *Sports analytics analysis reveals that past shared success among team members improves odds of future wins*
- ScienceDaily (Dec 03 2018) *Sports: Joint past successes increase the chances of winning*
- Psychology Today (Dec 03 2018) *The Hot Hand Phenomenon of Teamwork: Success Begets Success*
- The Wire (Dec 10 2018) *Why Physical Networks Aren't Like Their On-Paper Counterparts*
- The Economist (Jan 31 2015) *A burden shared*

- **The Economist** (Jul 09 2012) *Ranking cricket captains: Leaderboard*
- **Chemistry World** (Nov 18 2013) *Novelty hits top the charts*
- **TheTimes of India : Crest edition** (Jul 14 2012) *Game Theory*
- **Ibnlive** (Jul 10 2012) *Stats and the truth aren't the same*
- **sify.com** *Who is cricket's greatest captain? Science has the answer*
- **The Hindu** (Sep 08 2013) *After-math of the Ashes*
- **Kellogg insight** (Nov 04 2013) *A 'Virtuous Mix' Allows Innovation to Thrive*
- **Physics Today** (Aug 2012)
- **MIT Technology Review** (Jan 2012) *PageRank Identifies Greatest Cricket Team and Captain of All Time*
- **MIT Technology Review** (Aug 08 2012) *Statistical Evidence Reveals How Success Breeds Success In Sport*
- **Wall Street Journal** (May 31 2012) *Does Calling Timeout Actually Help?*
- **Former England Captain Mike Atherton's blog** (Feb 14 2013) *The Magnificent Mr Smith*
- **ei-samay** (May 7 2013)

Service

- Review Editor for *Frontiers in Social Physics*, *Frontiers in Research Policy and Strategic Management*
- Referee for *Research Policy*, *Journal of Product Innovation Management*, *Economics of Innovation and & Technology*, *Information & Management*, *Scientific Reports*, *PLoS ONE*, *Social Networks*, *Royal Society Open Science*, *European Management Review*, *Journal of Quantitative Analysis in Sports*, *Journal of Applied Statistics*, *Psychology of Sport & Exercise*, *Data*, *Euro. Phys. Journal B*, *Journal of Applied Statistics*, *IEEE Transactions on Computational Social Systems*, *Journal of the Operational Research Society*, *Sport in Society*, *Physica A*, *Chaos*, *Pramana*
- Referee of scientific proposals submitted to the European Research Council (ERC) Starting Grant 2016 Call for Proposals

Selected Conference Presentations

- Poster and Oral presentation at International conference on **Perspectives in Nonlinear Dynamics** conducted at International Centre for Theoretical Physics, Trieste, Italy between 16th – 27th July, 2007.
- Poster presentation at the 4th PhD European Complexity School, Hebrew University of Jerusalem, Jerusalem, September 2008.
- Won the best poster award at poster presentation at the discussion meeting on statistical and condensed matter physics, Indian Institute of Technology Guwahati, October 2009.
- Pecha Kucha talk at Sensible City Lab, MIT, Boston, U.S.A, October 2011.
- Oral presentation at **NetSci 2013**, Copenhagen, Denmark

- Oral presentation at **Science of Team Science** conference, Northwestern University, Evanston, 2013
- Oral presentation at **Sunbelt Conference**, St. Pete Beach, Florida, 2014
- Poster presentation at **NetSci 2014**, Berkeley, CA, 2014
- Contributed talk at **CSS 2015**, Tempe, AZ, 2015
- Contributed talk at **International Conference on Computational Social Science** , Kellogg School of Management, Evanston, 2016
- Invited talk at Center for Network Science, Central European University, Budapest, Hungary, 2017
- Contributed talk at **Science of Team Science** conference, Clearwater Beach, Tampa, FL, 2017
- Invited talk at **Cross-Disciplinary Applications of Complex Networks** , Shiv Nadar University, India, 2018
- Contributed talk & Poster at **International Conference on Computational Social Science** , Kellogg School of Management, Evanston, 2018
- Invited talk at **Network Science in Economics & Finance** , Indian Institute of Management, Ahmedabad, India, 2018
- Contributed talk & Poster at **International Conference on Computational Social Science** , Kellogg School of Management, Evanston, 2019
- Contributed talk & Poster at **International Conference on Computational Social Science** , Kellogg School of Management, Evanston, 2020

Current & Pending Grants & their Relationship

- 06/2015 – 05/2020 Donation to establish Red Hat Researcher on Open Innovation Communities; **Donor:** Red Hat Inc., Raleigh, North Carolina; **Donation:** \$100,000; **Principal Investigator:** Sabine Brusnwicker; **Role:** Red Hat Fellow
- 2–year SoO NSF grant; **Status:** Under Review; **Title:** Evolution of design and performance in open collaboration: A *motif* perspective, **Role:** Senior Personnel, **PI:** Sabine Brusnwicker, **co-PI:** Jeff Nickerson