

# SHAWN MANKAD

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## PERSONAL INFORMATION

### Educational Background

- Ph.D., Statistics, University of Michigan, 2013
- M.A., Statistics, University of Michigan, 2012
- B.S., Mathematics, Carnegie Mellon University, 2008

### Academic and Professional Appointments

- Assistant Professor of Analytics, Poole College of Management, North Carolina State University, 2022 – Present
- Assistant Professor of Operations, Technology and Information Management, Samuel Curtis Johnson Graduate School of Management, Cornell University, 2015 – 2023
  - Graduate Field Member in Statistics
  - Graduate Field Member in Applied Economics and Management
  - Clifford H. Whitcomb Faculty Fellow, 2020-2021
- Visiting Scholar, Federal Reserve Bank of Philadelphia, September 2021 – December 2021
- Assistant Professor of Business Analytics, Robert H. Smith School of Business, University of Maryland, 2013 – 2015
  - Affiliate Faculty of Applied Mathematics and Scientific Computation, University of Maryland, 2014 – 2015
- Dissertation Intern, Federal Reserve Board of Governors, Summer 2012
- Federal Contractor, the U.S. Commodity Futures Trading Commission, 2009 – 2013

## RESEARCH ACTIVITIES

### Publications

**Note:** FT-50 journals are **boldfaced**. Each hyperlink (shown in [blue](#)) will navigate to the article.

### Operations Management and Information Systems

1. Qiuping Yu, Shawn Mankad, and Masha Shunko, “[Evidence of the Unintended Scheduling Implications of Minimum Wage](#)”, *Manufacturing & Service Operations Management* (forthcoming).
  - Qiuping Yu, Shawn Mankad, and Masha Shunko, “[When a Higher Minimum Wage Leads to Lower Compensation](#)”, *Harvard Business Review* (digital article) (2021).
  - Qiuping Yu, Shawn Mankad, and Masha Shunko, “[Evidence of the Unintended Labor Scheduling Implications of the Minimum Wage](#)”, *Cato Research Briefs in Economic Policy*, no. 296 (2022).

2. Jorge Mejia, Shawn Mankad, and Anandasivam Gopal, "[Service Quality Using Text Mining: Measurement and Consequences](#)", *Manufacturing & Service Operations Management* 23, (6): 1354-1372 (2021).
3. Jorge Mejia, Shawn Mankad, and Anandasivam Gopal, "[A for Effort? Using the Crowd to Identify Moral Hazard in NYC Restaurant Hygiene Inspections](#)" *Information Systems Research*, 30:4, 1363-1386 (2019)
4. Shawn Mankad, Hyun Jeong Han, Joel Goh, and Srinagesh Gavirneni, "[Understanding Online Hotel Reviews through Automated Text Analysis](#)", *Service Science* 8.2, 124-138 (2016).
5. Hyun Jeong Han, Shawn Mankad, Srinagesh Gavirneni, and Rohit Verma, "[What Guests Really Think of Your Hotel: Text Analytics of Online Customer Reviews](#)", *Cornell Hospitality Report*, 16(2), 3-17 (2016).

## Finance

6. Albert J. Menkveld, Anna Dreber, Felix Holzmeister, Juergen Huber, Magnus Johannesson, Michael Kirchler, Sabastian Neususs, Michael Razen, Utz Weitzel, ..., Shawn Mankad, "[Non-Standard Errors](#)". *Journal of Finance* (forthcoming).
7. Celso Brunetti, Jeffrey H. Harris, and Shawn Mankad, "[The Urgency to Borrow in the Interbank Market](#)", *Economic Letters*, (2022).
8. Celso Brunetti, Jeffrey H. Harris, and Shawn Mankad, "[Sidedness in the Interbank Market](#)", *Journal of Financial Markets*, 100663, (2021).
9. Celso Brunetti, Jeffrey H. Harris, Shawn Mankad, and George Michailidis, "[Interconnectedness in the Interbank Market](#)", *Journal of Financial Economics*, 133(2), 520-538 (2019).
10. Shawn Mankad, George Michailidis and Andrei Kirilenko, "[On the Formation of Dodd-Frank Act Derivatives Regulations](#)". *PLoS One*, 14(3), p.e0213730 (2019).
11. Shawn Mankad, George Michailidis and Andrei Kirilenko, "[Discovering the Ecosystem of an Electronic Financial Market with a Dynamic Machine-Learning Method](#)", *Algorithmic Finance*, 2:2, 151-165 (2013).

## Statistics and Data Science

12. Cameron Bale, Monika Hu, Shawn Mankad, and Matthew Schneider, "[Protecting the Anonymity of Online Users Using Prior Distributions on their Textual Content](#)", *Expert Systems with Applications* (2023).
13. Desheng Ma and Shawn Mankad, "[CP-Squared: A Method for Change-Point Detection in Core-Periphery Networks](#)", *Expert Systems with Applications* (2022).
14. Samaneh Ebrahimi, Mostafa Reisi, Shawn Mankad, and Kamran Paynabar, "[Monitoring Sparse and Attributed Networks with Online Hurdle Models](#)", *IIE Transactions* (formerly *IIE Transactions*), Vol. 54(1), 91-104 (2021).
15. Matthew Schneider and Shawn Mankad, "[A Two-Stage Authorship Attribution Method using Text and Structured Data for De-Anonymizing User Generated Content](#)", *Customer Needs and Solutions*, 1-18 (2021).
16. Yuan Cheng and Shawn Mankad, "[An Online Semi-NMF Algorithm for Soft-Clustering of Financial Institutions](#)", *Proceedings of the SIGMOD Data Science for Macro Modeling Workshop* (2019).

17. Shawn Mankad, Shengli Hu, and Anandasivam Gopal, "[Single Stage Prediction with Online Reviews for Mobile App Development and Management](#)", *The Annals of Applied Statistics*, Vol. 12(4), 2279-2311, 2018.
18. Shawn Mankad, Celso Brunetti, and Jeffrey H. Harris, "[Balance Sheet Driven Probability Factorization for Inferring Bank Holdings: Extended Abstract](#)", *Proceedings of the SIGMOD Data Science for Macro Modeling Workshop* (2017).
19. Donggeng Xia, Shawn Mankad, and George Michailidis, "[Measuring Influence in Twitter Ecosystems using a Counting Process Modeling Framework](#)", *Technometrics*, Vol. 58(3), 360-370 (2016).
20. Shawn Mankad and George Michailidis, "[Analysis of Multiview Legislative Networks with Structured Matrix Factorization: Does Twitter Influence Translate to the Real World?](#)", *The Annals of Applied Statistics* Vol. 9(4), 1950-1972 (2015).
21. Runlong Tang, Moulinath Banerjee, George Michailidis, and Shawn Mankad, "[Two-Stage Plans for Estimating the Inverse of a Monotone Function](#)", *Technometrics*, Vol. 57, Iss. 3 (2015).
22. Shawn Mankad, George Michailidis, and Moulinath Banerjee, "[Threshold Value Estimation Using Adaptive Two-Stage Plans in R](#)", *Journal of Statistical Software*, 67(3), 1 – 19 (2015).
23. Shawn Mankad and George Michailidis, "[Biclustering Three-Dimensional Data Arrays with Plaid Models](#)", *Journal of Computational and Graphical Statistics*, Vol. 23, Iss. 4 (2014).
24. Shawn Mankad, George Michailidis, and Celso Brunetti, "[Visual Analytics for Network- Based Market Surveillance](#)", *Proceedings of the SIGMOD Data Science for Macro Modeling Workshop* (2014).
25. Shawn Mankad and George Michailidis, "[Discovery of Path-Important Nodes using Structured Semi-Nonnegative Matrix Factorization](#)", *IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing*, 288-291 (2013).
26. Shawn Mankad and George Michailidis, "[Structural and functional discovery in dynamic networks with non-negative matrix factorization](#)", *Physical Review E*, 88(4), 042812 (2013).

## Computational Biology and Medicine

27. Keith Baker, Bishr Haydar, and Shawn Mankad, "[A Feedback and Evaluation System that Provokes Minimal Retaliation by Trainees](#)", *Anesthesiology*, 126:327-337 (2017).
28. Marino, Simeone, Hannah P. Gideon, Chang Gong, Shawn Mankad, John T. McCrone, Philana Ling Lin, Jennifer J. Linderman, JoAnne L. Flynn, and Denise E. Kirschner, "[Computational and Empirical Studies Predict Mycobacterium tuberculosis-Specific T Cells as a Biomarker for Infection Outcome](#)", *PLoS Comput Biol* 12(4): e1004804 (2016).

## Working Papers

1. Shawn Mankad, Celso Brunetti, and Jeffrey H. Harris, "[Assessing Undiversified and Contagions Risks in the Banking Sector](#)", Under review at *Proceedings of the National Academy of Sciences*.
2. Li Chen and Shawn Mankad, "[A Structural Topic Sentiment Model for Text Analysis](#)", In revision at *Management Science*.

3. Andrew M. Davis, Shawn Mankad, Charles Corbett, and Elena Katok, "[The Best of Both Worlds: Machine Learning and Behavioral Science in Operations Management](#)", In revision at *Manufacturing & Service Operations Management*.
4. Shawn Mankad, Masha Shunko, and Qiuping Yu\*, "[Too Close for Comfort? Understanding Peer Effects in Large Franchised Networks](#)", In revision at *Production and Operations Management*.
5. Shawn Mankad, Celso Brunetti, and Jeffrey H. Harris\*, "[Networks, Interconnectedness, and Interbank Information Asymmetry](#)", In revision at *Journal of Financial Stability*.
6. Desheng Ma and Shawn Mankad, "[SMRT: A Structural Model of Latent Ratings and Topics in Text](#)", Preparing for submission.

### **External Funding and Research Grants**

- NSF BIGDATA: Too Interconnected to Fail? Network Analytics on Complex Economic Data Streams for Monitoring Financial Stability, PI, \$525,247, 2016 – 2021
- Wharton Customer Analytics Initiative Data Grant, 2015
- Wharton Customer Analytics Initiative Data Grant, 2014

### **Research and Service Recognition**

- 2022 M&SOM Meritorious Service Award
- Finalist for the Best Paper Award at the 2022 INFORMS Workshop on Data Mining and Decision Analytics
- CDO Magazine's 2021 List of Leading Academic Data Leaders
- Cornell Center for Hospitality Research Industry Relevance Award, 2017
- Cornell University Half-Century Faculty Research Fellowship, 2016 – 2018
- 1st Place Award in Student Research Competition, Midwest Statistics Research Colloquium, 2012

### **Patents**

1. "Identification and personalized protection of text data using Shapley values", Provisional patent (2021), Cornell University and Drexel University

### **Advising**

#### ***Graduate -- Doctoral***

- Zhen Chen (Statistics; 4<sup>th</sup> year student), North Carolina State University, Committee Member
- Anugna Reddy (Management: Operations, Technology, and Information Management; 4<sup>th</sup> year student), Cornell University, Committee Member
- Yuan Cheng (Management: Operations, Technology, and Information Management; 5<sup>th</sup> year student), Cornell University, Committee Chair
- Piyush Anand (Management: Marketing), Cornell University, Graduated Spring 2021, Committee Member, Assistant Professor at Rice University
- Saram Han (Hotel Administration), Cornell University, Graduated Fall 2019, Committee Member

- Shengli (Meredith) Hu (Management: Operations, Technology, and Information Management), Cornell University, Graduated Summer 2019, Committee member, Research Scientist at Dataminr
- Samaneh Ebrahimi (Industrial Engineering), Georgia Institute of Technology, Graduated Summer 2018, Thesis Committee Member, Data Scientist at Pandora
- Zhiming Shen (Computer Science), Cornell University, Graduated Fall 2017, Thesis Committee Member, Post-doc at Cornell University
- Hechao Sun (Applied Statistics), University of Maryland, Graduated Summer 2017, Thesis Committee member, Amazon Data Science
- Jorge Mejia (Information Systems), University of Maryland, Graduated Spring 2016, Thesis Committee member, Assistant Professor at Indiana University
- Bin Han, (Applied Mathematics), University of Maryland, Graduated Spring 2015, Thesis Committee member, Blackrock
- Stuart Price, (Decisions, Operations & Information Technologies), University of Maryland, Graduated Winter 2015, Thesis Committee member
- Hisham Talukder, (Applied Mathematics), University of Maryland, Graduated summer 2014, Thesis Committee member, Dow Jones & Company

#### ***Graduate -- Masters***

- Shivank Goel (Management: Operations, Technology, and Information Management), Cornell University, Graduated Fall 2020, Amazon Software Engineer

#### **Undergraduate**

- Theodore Michalik, Graduated Spring 2015 from University of Maryland, Thesis Advisor

### **TEACHING ACTIVITIES**

#### **Courses Taught**

##### **North Carolina State University:**

- BUS-351, Predictive Analytics in Business
  - Evaluation Fall 2022: Instructor = 4.8/5; Course = 4.6/5
- MBA-590-627, Machine Learning Methods in Business
  - Evaluation Fall 2022: Instructor = 4.9/5; Course = 4.9/5
- MBA-590-639, Business Analysis with SQL
  - Evaluation Spring 2023: Instructor = 4.8/5; Course = 4.8/5

##### **Cornell University:**

- NBA-6920, Machine Learning Applications in Business
  - Evaluation Spring 2022: Instructor = 4.48/5; Course = 4.23/5
  - Evaluation Spring 2021: Instructor = 4.64/5; Course = 4.51/5
  - Evaluation Spring 2020: Instructor = 4.69/5; Course = 4.63/5
- NBA-6550, Business Data Analysis with SQL

- Evaluation Spring 2022: Instructor = 4.69/5; Course = 4.48/5
  - Evaluation Spring 2021: Instructor = 4.65/5; Course = 4.40/5
  - Evaluation Spring 2020: Instructor = 4.61/5; Course = 4.43/5
- NBA-6550Y, Business Data Analysis with SQL (Summer Session)
  - Evaluation Summer 2022:
    - Instructor = 4.94/5; Course = 4.88/5
    - Instructor = 4.86/5; Course = 4.71/5
    - Instructor = 4.50/5; Course = 4.50/5
    - Instructor = 5.00/5; Course = 5.00/5
  - Evaluation Summer 2021: Instructor = 4.85/5; Course = 4.80/5
  - Evaluation Summer 2019: Instructor = 4.82/5; Course = 4.72/5
- NBA-6480, Digital Technology Practicum
  - Evaluation Spring 2022: Instructor = 4.55/5; Course = 3.92/5
  - Evaluation Spring 2021: Instructor = 4.72/5, 4.75/5; Course = 4.04/5, 4.38/5
  - Evaluation Spring 2020: Instructor = 4.46/5; Course = 3.89/5
- Faculty advisor for the [Cornell Quant Club](#), 2020 - 2022
- Faculty advisor for the Cornell FinTech Club, 2021 - 2022

#### **University of Maryland:**

- Distinguished Teaching Award, 2015, Awarded to faculty in the top 15% of teaching evaluation scores
- BMGT 431, Data Analytics
- BUDT 758B, Google Online Challenge and Analytics
- BMGT 430, Linear Statistical Models in Business

#### **University of Michigan:**

- Graduate Student Instructor Excellence in Teaching Award for an undergraduate Data Mining course, 2011, University of Michigan Statistics Department

## **SERVICE AND OUTREACH**

### **Editorial Boards and Reviewing Activities**

#### **Editorial Boards for Journals and Presses**

- Associate Editor for *Data Science in Science* (2022-Present)
- Editorial Advisory Board (2018-2021) for *Expert Systems with Applications*

#### **Ad-hoc Reviewing Activities for Journals and Presses**

### **Management Journals:**

- Management Science
- Manufacturing and Service Operations Management
- Operations Research

- Production and Operations Management
- IIE Transactions
- Information Systems Research
- Management Information System Quarterly
- European Journal of Information Systems
- Mathematics and Financial Economics
- Journal of Multinational Financial Management

#### Statistics and Data Science Journals:

- Journal of the American Statistical Association
- Journal of Computational and Graphical Statistics
- The American Statistician
- Applied Stochastic Models in Business and Industry
- Journal of Statistical Software
- Journal of Applied Statistics
- The Electronic Journal of Statistics
- INFORMS Journal on Computing
- Expert Systems with Applications
- Social Network Analysis and Mining
- Artificial Intelligence Review

#### **Reviewing Activities for Conferences**

- INFORMS Workshop on Data Science, 2020, 2019, 2018
- SIGMOD 2018 Workshop – Data Science for Macro-Modeling
- IIE ISERC 2015
- Winter Simulation Conference 2015
- SIGMOD Data Science for Macro-Modeling Workshop 2014
- IEEE Workshop on Computational Advances in Multi-Sensor Adaptive Processing 2014

#### **Committees, Professional & Campus Service**

##### **Leadership Roles in Meetings and Conferences**

- Member of Program Committee, [Federal Reserve Board Conference on The Interconnectedness of Financial Systems](#), 2023, 2021, 2019
- Conference Co-Chair, 2021 INFORMS Workshop on Data Science
- Associate Editor, International Conference on Information Systems 2020, 2018, 2017, 2016
- Member of Program Committee, INFORMS Workshop on Data Science, 2020, 2019, 2018
- Member of the Organizing Committee, 2018 Symposium on Data Science and Statistics
- Invited Member of the 3<sup>rd</sup> Workshop on an Open Knowledge Network (organized by the [NITRD Big Data Interagency Working Group](#), National Science Foundation, and the National Institute of Health) 2017
- Publicity Co-Chair for the 2017 INFORMS Workshop on Data Science

- Organizer and Session Chair, Invited Data-Mining Session Organizer, the 2016 INFORMS annual meeting
- Member of the Program Committee, SIGMOD Workshop – Data Science for Macro-Modeling, 2016, 2014
- Member of the Program Committee, Interface 2015 (Statistics Symposium)
- Session Organizer and Chair, 2014 INFORMS annual meeting
- Session Chair, 2014 Joint Statistical Meetings Session

#### **Other Non-University Committees, Memberships, Panels, etc.**

- Secretary, Treasurer of the Data Mining Section of INFORMS, 2013 – 2015
- Panelist for Academic Job Search Panel at INFORMS 2018

#### **Campus Service - College**

- Cornell University Reappointment Review Committee for Lecturer (Hotel School), 2017- 2018
- University of Maryland Member of Research Computing Committee, 2014 – 2015

#### **Campus Service - Department**

- University of Maryland Research Computing Infrastructure Survey Team, 2014

### **SELECTED MEDIA COVERAGE**

#### **Research**

1. June 23, 2021, “[A Higher Minimum Wage Can Lead Employers to Lower Compensation](#)”, *Bloomberg*
2. June 22, 2021, “[More Hidden Costs in the Fight for \\$15](#)”, *The Wall Street Journal*
3. Feb 22, 2019, “[A Breakthrough Is Claimed in Systemic Risk Monitoring](#)”, *GARP Risk Intelligence*
4. Dec 6, 2018, “Restaurant Hygiene, Risky Business Systems”, <https://research.cornell.edu/news-features/restaurant-hygiene-risky-business-systems>
5. Nov 11, 2018, “Thanks, statistics! A faster way to improve mobile apps”, *Cornell Chronicle*, <http://news.cornell.edu/stories/2018/11/thanks-statistics-faster-way-improve-mobile-apps>
6. Sept 12, 2018, “Fed study proposes method for tracking banks’ systemic risks more often”, *MLex Insight*
7. July 11, 2018, “Bank network shifts signaled financial crisis -- and may prevent another”, *EurekAlert!*, [https://eurekalert.org/pub\\_releases/2018-07/cu-bns071018.php](https://eurekalert.org/pub_releases/2018-07/cu-bns071018.php)
8. Mar 11, 2016, “Cornell study analyzes TripAdvisor reviews to help hotel managers”, *Tnooz*, <http://www.tnooz.com/article/cornell-study-analyzes-tripadvisor-reviews-to-help-hotel-managers/>
9. Mar 8, 2016, “Online hotel reviews only partially tell what customers really think”, *Cornell Chronicle*, <http://www.news.cornell.edu/stories/2016/03/online-reviews-only-partially-reveal-what-hotel-customers-think>
10. Feb 12, 2016, “Text Analytics Reveal the Impact of Guest Sentiment on Hotel Review Scores”, *HospitalityNet*



11. Feb 11 2016, "What Guests Really Think of Your Hotel: Text Analytics of Online Customer Reviews", *Hotel News Resource*
12. Nov 8, 2015, "Yelp Gets A 4.5 Star Rating", *Seeking Alpha*
13. Mar 2015, "MSN Money Show" profiles brand-enthusiasm index, referenced here:  
<http://www.czarmetrics.com/blog/2015/1/26/second-annual-emerging-brands-study-the-best-of-the-best-1>
14. Feb 26 2015, "Yelp as Prophet", *Biz Ed*
15. Dec 23 2014, "Online reviews help predict restaurant success", *Baltimore Daily Record*
16. Dec 16, 2014 *Washington Business Journal* <http://www.bizjournals.com/washington/blog/top-shelf/2014/12/umc-researchers-use-yelp-reviews-to-predict.html?page=all>
17. Dec 16, 2014 *InTheCapital* <http://inthecapital.streetwise.co/2014/12/16/dc-restaurant-closings-predicted-by-yelp-reviews/>
18. Dec 16, 2014, *Eater.com* - <http://www.eater.com/2014/12/16/7405117/can-yelp-reviews-predict-restaurant-shutters>
19. Mar 2014, "Do Regulators Listen to Public? Study Says Yes", *The Wall Street Journal, Compliance Building*
20. Dec 15, 2014, *Hospitality Industry News* [http://www.hospitality-industry.com/index.php/news/comments/researchers\\_use\\_text-mining\\_software\\_to\\_predict\\_success\\_failure\\_of/](http://www.hospitality-industry.com/index.php/news/comments/researchers_use_text-mining_software_to_predict_success_failure_of/)
21. Jan 2014, "Academic devise formula to gauge how well U.S. regulators listen", *Reuters, Chicago Tribune*

## Teaching

1. Aug 6, 2018, "Data Science in MBA Programs: Rosy Job Prospects", find-mba.com, <https://find-mba.com/articles/data-science-in-mba-programs-rosy-job-prospects>
2. Feb 17, 2016, "Business Analytics Master's Growth Gathers Pace As Big Data Demand Outstrips Supply", *Business Because*
3. Jan 19 2016, "Cornell To Launch Big Data-Focused MBA Program Featuring Twitter, Yahoo, Amazon", *Business Because*