

Ravi Shroff

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Employment

New York University

Steinhardt School of Culture, Education, and Human Development

Assistant Professor of Applied Statistics, 2017 - present

Department of Applied Statistics, Social Science, and Humanities

Center for Urban Science and Progress

Assistant Professor of Urban Informatics, 2017 - present

Senior Research Scientist, 2016 - 2017

Research Scientist, 2014 - 2016

The Australian National University

Mathematical Sciences Institute

Postdoctoral Fellow, 2011 - 2013

Other Positions and Affiliations

Stanford Computational Policy Lab: Affiliated Researcher

ACLU of Illinois: Expert (2016 - present)

New York City Administration for Children's Services: Consultant (2016-2017)

Stanford University: Visiting scholar, (Jan-Mar 2016, Sept-Dec 2017)

Education

M.S. Applied Urban Science and Informatics, New York University, 2014.

Ph.D. Mathematics, University of California, San Diego, 2011.

M.S. Mathematics, University of California, San Diego, 2009.

B.S. Mathematics, Economics, University of Washington, 2005.

Refereed Publications

J. Jung, S. Corbett-Davies, R. Shroff, S. Goel, "Omitted and Included Variable Bias in Tests for Disparate Impact." (2018). Under Review.

- J. Jung, R. Shroff, A. Feller, S. Goel, “Algorithmic Decision Making in the Presence of Unmeasured Confounding.” (2018). Under Review.
- J. Jung, C. Concannon, R. Shroff, S. Goel, D. Goldstein, “Simple Rules for Complex Decisions.” (2018). Under Review.
- R. Shroff, “Predictive Analytics for City Agencies: Lessons from Children’s Services.” (2017). In *Big Data*, Vol 5 (No. 3), 189-196.
- S. Goel, M. Perelman, R. Shroff, D. Sklansky, “Combatting Police Discrimination in the Age of Big Data.” (2017). In *New Criminal Law Review*, Vol 20 (No. 2), 181-232.
- S. Goel, J. Rao, R. Shroff, “Precinct or Prejudice? Understanding Racial Disparities in New York City’s Stop-and-Frisk Policy.” (2016). In *Annals of Applied Statistics*, Vol 10 (No. 1), 365-394.
- R. Wang, **R. Shroff**, Y. Zha, S. Seshan, M. Veloso, “Indoor Trajectory Identification: Snapping With Uncertainty.” (2015). *Proceedings of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2015)*.
- P. Ebenfelt, R. Shroff, “Partial rigidity for CR embeddings of real hypersurfaces into hyperquadrics with small signature difference.” (2015). In *Comm. Anal. Geom*, Vol 23 (No. 1), 159-190.
- S. Duong, J. Lebl, A. Minor, R. Shroff, Y. Zhang, “CR singular images of generic submanifolds under holomorphic maps.” (2014). In *Arkiv för Matematik*, **52**, no.2, 301-327.

Other Publications

- S. Goel, R. Shroff, J. Skeem, C. Slobogin, “The Accuracy, Equity, and Jurisprudence of Criminal Risk Assessment.” (To appear). *Research Handbook on Big Data Law*.
- A. Chohlas-Wood, A. Shoemaker, R. Shroff, S. Goel, “An Analysis of the Metropolitan Nashville Police Department’s Traffic Stop Practices.” (2018). *Technical report*.
- R. Shroff, “Statistical Tests to Audit Investigative Stops.” (2018). In *Ohio State Journal of Criminal Law*, Vol 15 (No. 2), 565-571.
- S. Goel, J. Rao, R. Shroff, “Personalized Risk Assessments in the Criminal Justice System.” (2016). In *The American Economic Review (Papers and Proceedings)*, Vol 106 (No. 5), 119-123.
- R. Shroff, R. Dunks, J. Lim, H. Wang, M. Castro, “Allocation of Pre-Kindergarten Seats in New York City.” (2014). In *The AAAI 2014 Workshop on Semantic Cities: Beyond Open Data to Models, Standards, and Reasoning*, Quebec City, Canada.

Grants

- Knight Foundation - News Challenge on Data. “Law, Order, and Algorithms: Making Sense of 100 Million Highway Patrol Stops.” (Team member). \$310,000.

Honors, Awards, & Fellowships

Fellow, Data & Society Research Institute, 2016-2017

Center for Urban Science and Progress (CUSP) Inaugural Fellowship, NYU, 2013-2014.

Summer Graduate Teaching Fellow, University of California, San Diego, 2010.

Outstanding Teaching Assistant Award, University of California, San Diego, 2010.

Selected Invited Talks

SSWR 2019 session on Predicting Maltreatment and System Involvement, presenting author, Jan. 2019 (San Francisco)

CMStatistics 2018 session on Societal Implications of Work in Statistics and Data Science, panelist, Dec. 2018 (Pisa, Italy)

Workshop on Data-Driven Criminal Justice Reform, panelist, Oct. 2018 (NYU)

Workshop on Statistical Inference, Learning and Models in Data Science, invited speaker, social policy session, Sept. 2018 (Fields Institute, Toronto)

Working Across Sectors to Support Vulnerable Youth in Schools, plenary panelist, June 2018 (NYU)

Data for Good speaker series, April 2018 (Columbia University)

SSWR 2018 tutorial: Opening the Black Box: Ethically responsible use of big data, panelist, Jan. 2018 (Washington D.C.)

Big Data and Criminal Justice Round Table, Sept. 2017 (The Ohio State University)

“Data Tales from Industry” panel, June 2017, ISBIS 2017 (IBM Research, Yorktown Heights)

Lunch Seminar, Mar. 2017, Crime Lab New York (NYC)

Risk Assessment Tools, Jan. 2017, New York City Bar Association - Civil Rights Committee (NYC)

Spotlight session, Nov. 2016, Fairness, Accountability, and Transparency in ML (NYU)

CLIP colloquium, Oct. 2016 (University of Maryland)

Algorithmic bias panel, Oct. 2016, Justice Codes Symposium (John Jay College)

Lunch Seminar, Oct. 2016, Center for Data Science (NYU)

Big Data, Machine Learning, and Criminology panel, Nov. 2015, Annual meeting of the American Society of Criminology (Washington D.C.)

“Firestarter” talk, Nov. 2015, Data & Civil Rights Workshop (Washington D.C.)

Tea Talk, Oct. 2014, Microsoft Research (NYC)

Differential Geometry Seminar, March 2012, Australian National University (Canberra)

Analysis Seminar, May 2011 (UC Irvine)

Complex Analysis and Geometry Seminar, Dec. 2010 (Rutgers University)

Emerging Applications of Complexity for CR Mappings, Fall 2010, American Institute of Mathematics (Palo Alto)

Other Professional Service

Invited member, Predictive Analytics Advisory Group, New York City's Administration for Children's Services (ongoing).

Invited member, Data Analytics Working Group, Center for the Advancement of Public Integrity (2016).

Invited participant, Innovations for Urban Security and Policing, LSE Cities (Nov. 2015).

Session Organizer, CMStatistics 2018

Program Committee member, FAT* 2019

Reviewer: Journal of Policy Analysis and Management; Behavioral Sciences and the Law; ACM Transactions on Management Information Systems

Teaching Experience

New York University, New York City

Messy Data & Machine Learning, Fall 2018

Statistical Mysteries and How to Solve Them, Spring 2018, Spring 2019

Data and Algorithms in the Criminal Justice System, Spring 2018, Spring 2019

Machine Learning for Cities, Spring 2016

Science of Cities research seminar, Summer 2015

Urban Science Intensive I, Spring 2015

Capstone Project Supervisor, 2015-2017

The Australian National University, Canberra

Calculus, Fall 2012

University of California, San Diego

Multivariable Calculus, Summer 2010

Teaching Assistant, Fall 2006 to Spring 2011.