Dr. Ryan J. Giordano

Contact Information

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Education

Massachusetts Institute of Technology, Cambridge, MA USA 2019–present
Department of EECS, Computer Science & Artificial Intelligence Lab
Postdoctoral Research Fellow. Advisor: Tamara Broderick

University of California, Berkeley, CA USA 2013–2019
Ph.D., Statistics. Advisors: M. I. Jordan, J. McAuliffe, T. Broderick
Thesis: *On the Local Sensitivity of M-Estimation: Bayesian and Frequentist Applications*

London School of Economics, London, UK 2006–2008
MSc., Econometrics.

University of Illinois, Urbana-Champaign, IL, USA 1997–2002
BA., Mathematics, BS., Theoretical and Applied Mechanics.

Professional Experience

Google Inc., Mountain View, CA USA 2009–2013
Senior Engineer, Quantitiative Analysis

Macquarie Group, London, UK 2008
Risk Management Intern

United States Peace Corps, Kokshetau, KZ 2004–2006
Education Volunteer, successful completion of service

Hewlett-Packard, Boise, ID 2002–2004
Lifetest Coordinator and Reliability Engineer

Honors and Awards

PhD and following
Notable Paper Award, Artificial Intelligence and Statistics (AISTATS) (2019)
Travel Award, Artificial Intelligence and Statistics (AISTATS) (2019)
Travel Award, Bayesian Nonparametrics Conference (2019)
Student Paper Award, ASA Section on Bayesian Statistical Science (2018)
Travel Award, International Society for Bayesian Analysis (ISBA) (2018)
Berkeley Institute for Data Science Fellow (2017-19)
Junior Travel Support Grant, International Society for Bayesian Analysis (ISBA) Bayes-Comp (2016)
Spotlight Paper, Neural Information Processing Systems (NeurIPS) (2015)
Outstanding Graduate Student Instructor Award (2015)
Travel Award, Neural Information Processing Systems Workshop on Variational Inference (2014)
Hertz Foundation Graduate Fellowship Finalist (2014)

Pre-PhD
Google Operating Committee Award (2010)
Advanced-high speaker of Russian in Peace Corps Aptitude Test (2006)
Advanced-mid speaker of Kazakh in Peace Corps Aptitude Test (2006)
Selected as a Peace Corps "Success Story" for a congressional report (2005)
Best Project & Presentation, Undergraduate Mechanics Research Conference (2002)
Seely, Sinclair, Stippes, TAM Merit Scholarships (1998-2002)

PREPRINTS

T. Broderick, R. Meager*, & **R. J. Giordano*** (2020). An Automatic Finite-Sample Robustness Metric: Can Dropping a Little Data Change Conclusions?
$\star$ = equal contribution lead authors. *arXiv:2011.14999 [stat.ME].* [pdf]

R. J. Giordano, M. I. Jordan, & T. Broderick (2019). A Higher-Order Swiss Army Infinitesimal Jackknife. *arXiv:1907.12116 [stat.ME].* [pdf]

PUBLICATIONS

R. J. Giordano, W. Stephenson, R. Liu, M. I. Jordan, & T. Broderick (2019). A Swiss Army Infinitesimal Jackknife. In *The 22nd International Conference on Artificial Intelligence and Statistics.* [pdf]

R. J. Giordano, T. Broderick, & M. I. Jordan (2018). Covariances, Robustness, and Variational Bayes. In *Journal of Machine Learning Research.* [pdf]

J. Regier, K. Fischer, K .Pamnany, A. Noack, J. Revels, M. Lam, S. Howard, **R. J. Giordano**, D. Schlegel, J. McAuliffe, & R. Thomas (2019). Cataloging the visible universe through Bayesian inference in Julia at petascale. In *Journal of Parallel and Distributed Computing.* [pdf]

J. Regier, K. Pamnany, K. Fischer, A. Noack, M. Lam, J. Revels, S. Howard, **R. J. Giordano**, D. Schlegel, J. McAuliffe, R. Thomas, & Prabhat (2018). Cataloging the Visible Universe through Bayesian Inference at Petascale. In *IEEE International Parallel and Distributed Processing Symposium (IPDPS). IEEE, 2018.* [pdf]

R. J. Giordano, T. Broderick, & M. I. Jordan (2015). Linear Response Methods for Accurate Covariance Estimates from Mean Field Variational Bayes. In *Advances in Neural Information Processing Systems.* [pdf]

R. Winther, **R. J. Giordano**, M. D. Edge, & R. Nielsen (2015). The Mind, the Lab, and the Field: Three Kinds of Populations in Scientific Practice. In *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences.* [pdf]

WORKSHOP PAPERS

R. J. Giordano*, R. Liu*, M. I. Jordan, & T. Broderick (2018). Evaluating Sensitivity to the Stick Breaking Prior in Bayesian Nonparametrics. In *NeurIPs 2018 Bayesian Nonparametrics Workshop.*
$\star$ = contributed equally. [pdf]

R. J. Giordano*, R. Liu*, N. Varoquaux*, M. I. Jordan, & T. Broderick (2017). Measuring Cluster Stability for Bayesian Nonparametrics Using the Linear Bootstrap. In *NeurIPs 2017 Advances in Approximate Bayesian Inference Workshop.*
$\star$ = contributed equally. [pdf]

R. J. Giordano, T. Broderick, R. Meager, J. Huggins, & M. I. Jordan (2016). Fast Robustness Quantification with Variational Bayes. In *2016 ICML Workshop on #Data4Good: Machine Learning in Social Good Applications.* [pdf]

Academic Talks

International Society for Bayesian Analysis Annual Meeting — (upcoming) 2021
A Variational Bayesian Perspective on the EM Algorithm

BAYESM:O — Nov 2020
Effortless Frequentist Covariances of Posterior Expectations in Stan

Stancon — July 2020
Effortless Frequentist Covariances of Posterior Expectations in Stan

Splunk Statistics Seminar Series — Oct 2019
A Higher-Order Swiss Army Infinitesimal Jackknife

Google Statistics Journal Club — Sep 2019
On the Local Sensitivity of M-estimation: Bayesian and Frequentist Applications

Berkeley Statistics Student Seminar Series — April 2019
Sensitivity and Uncertainty in Variational Bayes With an Application to the EM Algorithm

Oxford BNP — June 2019
Evaluating Sensitivity to the Stick Breaking Prior in Bayesian Nonparametrics

Berkeley Institute for Data Science Lunchtime Seminar Series — October 2018
Sensitivity, Uncertainty, and Automatic Differentiation

Berkeley Institute for Data Science Lunchtime Seminar Series — July 2018
Bayesian Inference and Inverse Problems

Stancon — Jan 2018
Automatic Robustness Measures in Stan

Berkeley BSTARS Conference — March 2017
How Bad Could it Be? Worst-case Prior Sensitivity Estimates for Variational Bayes

Berkeley BSTARS Conference — March 2016
Measuring Robustness with Variational Bayes

Berkeley-Stanford Student Joint Colloquium — Nov 2014
Covariance Matrices for Mean Field Variational Bayes

Joint Statistical Meetings — Aug 2013
Estimating Average Proportional Changes in Large, Sparse Data

Professional Service

Journal Reviewing

- Journal of Machine Learning Research
- Statistics and Computing
- Molecular Biology and Evolution
- The British Journal for the Philosophy of Science

Conference and Workshop Reviewing

- Advances in Neural Information Processing Systems (NeurIPS)
- International Conference on Machine Learning (ICML)
- International Conference on Artificial Intelligence and Statistics (AISTATS)
- I Can't Believe It's Not Better Workshop (NeurIPS 2020)
- Advances in Approximate Bayesian Inference Symposioum (2015-2017, 2019)

Student Leadership

University of California, Berkeley, Statistics Department

- Diversity Taskforce Member 2018-2019
- Graduate Student Mentor 2017-2019
- Diversity Committee Member 2017
- Co-organizer of the Gender and Diversity Roundtable 2016-2018
- Student Seminar Committee Member 2014-2017

Universty of Illinois, Urbana-Champaign, Engineering Mechanics Department

- President, Student Society for Experimental Mechanics 2000-2002
- Organizer, Free University Opera for Engineering Students 2001-2002

Teaching

University of California, Berkeley, USA

- Teaching Assistant, STAT215 Applied Statistics (Graduate-level) Fall 2014

Kokshetau Elementary School #3, Kokshetau, Kazakhstan

- Elementary school teacher of mathematics and English as a second language 2004-2006

University of Illinois, Urbana-Champaign, USA

- Teaching Assistant, Mechanics of Materials Lab Fall 1999
- Teaching Assistant, Introduction to Statics Spring 1999