Ryan J. Giordano

Contact Information

1515 Grant St.
Berkeley, CA, 94703
USA

✉ rgiordan@mit.edu
rgiordan.github.io
☎ (805) 501-6754

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 June–Dec 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

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)
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, Undergraduate Mechanics Research Conference (2002)
Best Presentation, Undergraduate Mechanics Research Conference (2002)
Seely, Sinclair, Stippes, TAM Merit Scholarships (1998-2002)

Preprints

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, and 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. Liu *, **R. J. Giordano** *, M. I. Jordan, T. Broderick (2018). Evaluating Sensitivity to the Stick Breaking Prior in Bayesian Nonparametrics. In *NeurIPs 2018 Bayesian Nonparametrics Workshop.* [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.* [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]

$\star$ = contributed equally

Academic Talks

A Variational Bayesian Perspective on the EM Algorithm.	(upcoming) ISBA 2021
Effortless frequentist covariances of posterior expectations in Stan.	BAYESM:O Nov 2020
Effortless Frequentist Covariances of Posterior Expectations in Stan.	Stancon 2020
Automatic Robustness Measures in Stan.	Stancon 2018
Evaluating Sensitivity to the Stick Breaking Prior in Bayesian Nonparametrics.	2019 Oxford BNP
Bayesian Inference and Inverse Problems.	BIDS Lunch Talk July 2018

Sensitivity, Uncertainty, and Automatic Differentiation. BIDS Lunch Talk Oct 2018

A Bayesian Perspective on EM Covariances. Bin's group 2019

Estimating Average Proportional Changes in Large, Sparse Data. JSM 2013

Measuring Bayesian (and Variational Bayesian) Robustness Mahoney Group, April 2017

Variational Methods for Latent Variable Problems. Perlmutter Group, June 2019

Local Sensitivity of M-estimators: Bayesian and Frequentist Applications. Jordan Group, May 2019

Sensitivity and Uncertainty in Variational Bayes With an Application to the EM Algorithm SGSA, April 2019

A Higher-Order Swiss Army Infinitesimal Jackknife Splunk October 2019

Measuring Robustness with Variational Bayes BSTARS, March 2016

How bad could it be? Worst-case prior sensitivity estimates for Variational Bayes BSTARS, March 2017

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

Professional Service

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

Univeristy of Illinois, Urbana-Champaign, Engineering Mechanics Department

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

Journal Reviewing

- Journal of Machine Learning Research

Conference Reviewing

- Advances in Neural Information Processing Systems (NeurIPS)
- International Conference on Machine Learning (ICML)
- International Conference on Artificial Intelligence and Statistics (AISTATS)

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