

Dr. Ryan J. Giordano

CONTACT INFORMATION

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EDUCATION

Massachusetts Institute of Technology, Cambridge, MA USA 2019–present
Department of EECS, Laboratory for Information & Decision Systems
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, Quantitative 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

Selected for the Nov 5th 2021 Gary Chamberlain Online Seminar in Econometrics (2021)
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 /
IN PREPARATION

R. J. Giordano*, M. Ingram* & T. Broderick (2021). Faster and More Accurate Black Box Variational Inference Using a Deterministic Objective.

★ = equal contribution first authors. In preparation.

R. J. Giordano & T. Broderick (2021). The Bayesian Infinitesimal Jackknife for Variance. In preparation.

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

UNDER REVIEW

T. Broderick, **R. J. Giordano***, R. Meager* & (2021). An Automatic Finite-Sample Robustness Metric: When Can Dropping a Little Data Make a Big Difference?

★ = equal contribution first authors (author order alphabetical). *arXiv:2011.14999 [stat.ME]*. [link]

Selected for the Nov 5th 2021 **Gary Chamberlain Online Seminar in Econometrics**.

Submitted to *Econometrica*.

R. J. Giordano*, R. Liu*, M. I. Jordan, & T. Broderick (2021). Evaluating Sensitivity to the Stick-Breaking Prior in Bayesian Nonparametrics.

★ = equal contribution first authors. *arXiv:2107.03584 [stat.ME]*. [link].

Submitted to *Bayesian Analysis*.

PUBLICATIONS

R. J. Giordano, W. Stephenson, R. Liu, M. I. Jordan, & T. Broderick (2019). A Swiss Army Infinitesimal Jackknife. *The 22nd International Conference on Artificial Intelligence and Statistics*. [link] One of three papers selected for an **AISTATS notable paper award**.

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

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*. [link]

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*. [link]

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*. One of 67 papers selected for a **Spotlight presentation**. [link]

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*. [link]

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*.

★ = equal contribution first authors. [link]

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*.

★ = equal contribution first authors. [link]

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*. [link]

INVITED TALKS	NeurIPS 2021 Bayesian Deep Learning Workshop (upcoming) December 2021 Frequentist Covariances of Posterior Expectations with the Bayesian Infinitesimal Jackknife
	Johns Hopkins Bayesian Learning And Spatial Temporal (BLAST) working group October 2021 Variational Methods for Latent Variable Problems
	New England Statistical Society (NESS) annual meeting October 2021 Frequentist Covariances of Posterior Expectations with the Bayesian Infinitesimal Jackknife
	Joint Statistical Meetings (JSM) August 2021 An Automatic Finite-Sample Robustness Metric: Can Dropping a Little Data Change Conclusions?
	International Society for Bayesian Analysis Annual Meeting June 2021 Frequentist Covariances of Posterior Expectations with the Bayesian Infinitesimal Jackknife
	ISBA-BNP series webinar May 2021 Assessing Sensitivity to the Stick-Breaking Prior in Bayesian Nonparametrics
	Harvard Graduate School of Education Miratrix CARES lab February 2021 An Automatic Finite-Sample Robustness Metric: Can Dropping a Little Data Change Conclusions?
	Splunk Statistics Seminar Series October 2019 A Higher-Order Swiss Army Infinitesimal Jackknife
	Google Statistics Journal Club September 2019 On the Local Sensitivity of M-estimation: Bayesian and Frequentist Applications
	Perlmutter Research Group June 2019 Variational Methods for Latent Variable Problems
CONTRIBUTED TALKS	BAYSM Bayesian Young Statisticians Meeting August 2021 Assessing Sensitivity to the Stick-Breaking Prior in Bayesian Nonparametrics
	BAYSM Bayesian Young Statisticians Meeting November 2020 Effortless Frequentist Covariances of Posterior Expectations in Stan
	StanCon July 2020 Effortless Frequentist Covariances of Posterior Expectations in Stan
	Berkeley Statistics Student Seminar Series April 2019 Sensitivity and Uncertainty in Variational Bayes with an Application to the EM Algorithm
	12th International Conference on Bayesian Nonparametrics, Oxford, UK 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 January 2018 Automatic Robustness Measures in Stan
	Berkeley BSTARS Conference March 2017 How Bad Could it Be? Worst-case Prior Sensitivity Estimates for Variational Bayes

CONTRIBUTED TALKS (CONTINUED)	Berkeley BSTARS Conference	March 2016
	Measuring Robustness with Variational Bayes	
	Berkeley–Stanford Student Joint Colloquium Covariance Matrices for Mean Field Variational Bayes	November 2014
	Joint Statistical Meetings (JSM) Estimating Average Proportional Changes in Large, Sparse Data	August 2013
PROFESSIONAL SERVICE	Student Leadership	
	<i>University of California, Berkeley, Statistics Department</i>	
	• 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
	<i>University of Illinois, Urbana-Champaign, Engineering Mechanics Department</i>	
	• President, Student Society for Experimental Mechanics	2000–2002
	• Organizer, Free University Opera for Engineering Students	2001–2002
	Journal Reviewing	
	• Bayesian Analysis	
	• 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)	
	• Advances in Approximate Inference (NeurIPS-adjacent workshop)	
	• I Can’t Believe It’s Not Better (NeurIPS workshop)	
TEACHING	<i>University of California, Berkeley, CA, USA</i>	
	• Teaching Assistant, STAT215 Applied Statistics (Graduate-level)	Fall 2014
	<i>Prison University Project, San Quentin State Prison, CA, USA</i>	
	• Volunteer math teacher	Fall 2015, Spring 2016, Fall 2017
	<i>Kokshetau Elementary School #3, Kokshetau, Akhmola, Kazakhstan</i>	
	• Elementary school teacher of mathematics and English as a second language	2004–2006
	<i>University of Illinois, Urbana-Champaign, IL, USA</i>	
	• Teaching Assistant, Mechanics of Materials Lab	Fall 1999
	• Teaching Assistant, Introduction to Statics	Spring 1999