

Dr. Ryan J. Giordano

CONTACT INFORMATION	1121 Colusa Ave. Berkeley, CA, 94707 USA	✉ rgiordano@berkeley.edu 🐙 rgiordan.github.io ☎ (805) 501-6754
EDUCATION	University of California Berkeley, CA USA Ph.D., Statistics. Advisors: M. I. Jordan, J. McAuliffe, T. Broderick Thesis: <i>On the Local Sensitivity of M-Estimation: Bayesian and Frequentist Applications</i> London School of Economics, London, UK MSc., Econometrics. University of Illinois Urbana-Champaign, IL, USA BA., Mathematics. BS., Theoretical and Applied Mechanics.	2013–2019 2006–2008 1997–2002
PROFESSIONAL EXPERIENCE	University of California Berkeley, CA USA Assistant professor of statistics. Massachusetts Institute of Technology, Cambridge, MA USA <i>Department of EECS, Laboratory for Information & Decision Systems</i> Postdoctoral Research Fellow. Advisor: Tamara Broderick Google Inc., Mountain View, CA USA Senior Engineer, Quantitative Analysis Macquarie Group, London, UK Risk Management Intern United States Peace Corps, Kokshetau, KZ Education Volunteer, successful completion of service Hewlett-Packard, Boise, ID Lifetest Coordinator and Reliability Engineer	2023–present 2019–2023 2009–2013 2008 2004–2006 2002–2004
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 & T. Broderick (2023). The Bayesian Infinitesimal Jackknife for Variance. *arXiv:2305.06466 [stat.ME]* [link]

M. Kasprzak, **R. J. Giordano** & T. Broderick (2022). How good is your Gaussian approximation of the posterior? Finite-sample computable error bounds for a variety of useful divergences. *arXiv:2209.14992 [math.ST]*. [link]

R. J. Giordano^{*}, M. Ingram^{*} & T. Broderick (2023). Black Box Variational Inference with a Deterministic Objective: Faster, More Accurate, and Even More Black Box. ^{*} = equal contribution first authors. *arXiv:2304.05527 [cs.LG]* [link]

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**.

PUBLICATIONS

R. Berlinghieri, B. Trippe, B. David, **R. J. Giordano**, K. Srinivasan, T. Özgökmen, X. Junfei & T. Broderick (2023). Gaussian processes at the Helm (holtz): A more fluid model for ocean currents. *Proceedings of the 40th International Conference on Machine Learning (ICML 2023)* [link]

R. J. Giordano^{*}, R. Liu^{*}, M. I. Jordan, & T. Broderick (2021). Evaluating Sensitivity to the Stick-Breaking Prior in Bayesian Nonparametrics (with Discussion). *Bayesian Analysis 18.1 (2023): 287-366* [link]. Selected as a **discussion paper**. ^{*} = equal contribution first authors.

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	Flatiron institute Bayesian Reading Group Black Box Variational Inference with a Deterministic Objective	May 2023
	BayesComp 2023 (Robustness to Model Misspecification session) Frequentist Covariances of Posterior Expectations with the Bayesian Infinitesimal Jackknife	March 2023
	Stanford Statistics Seminar An Automatic Finite-Sample Robustness Metric: Can Dropping a Little Data Make a Big Difference?	July 2022
	NeurIPS 2021 Bayesian Deep Learning Workshop Frequentist Covariances of Posterior Expectations with the Bayesian Infinitesimal Jackknife	December 2021
	Johns Hopkins Bayesian Learning And Spatial Temporal (BLAST) working group Variational Methods for Latent Variable Problems	October 2021
	New England Statistical Society (NESS) annual meeting Frequentist Covariances of Posterior Expectations with the Bayesian Infinitesimal Jackknife	October 2021
	Joint Statistical Meetings (JSM) An Automatic Finite-Sample Robustness Metric: Can Dropping a Little Data Change Conclusions?	August 2021
	International Society for Bayesian Analysis Annual Meeting Frequentist Covariances of Posterior Expectations with the Bayesian Infinitesimal Jackknife	June 2021
	ISBA-BNP series webinar Assessing Sensitivity to the Stick-Breaking Prior in Bayesian Nonparametrics	May 2021
	Harvard Graduate School of Education Miratrix CARES lab An Automatic Finite-Sample Robustness Metric: Can Dropping a Little Data Change Conclusions?	February 2021
	Splunk Statistics Seminar Series A Higher-Order Swiss Army Infinitesimal Jackknife	October 2019
	Google Statistics Journal Club On the Local Sensitivity of M-estimation: Bayesian and Frequentist Applications	September 2019
	Perlmutter Research Group Variational Methods for Latent Variable Problems	June 2019
CONTRIBUTED TALKS	BAYSM Bayesian Young Statisticians Meeting Assessing Sensitivity to the Stick-Breaking Prior in Bayesian Nonparametrics	August 2021
	BAYSM Bayesian Young Statisticians Meeting Effortless Frequentist Covariances of Posterior Expectations in Stan	November 2020
	StanCon Effortless Frequentist Covariances of Posterior Expectations in Stan	July 2020
	Berkeley Statistics Student Seminar Series Sensitivity and Uncertainty in Variational Bayes with an Application to the EM Algorithm	April 2019

12th International Conference on Bayesian Nonparametrics, Oxford, UK Evaluating Sensitivity to the Stick Breaking Prior in Bayesian Nonparametrics	June 2019
Berkeley Institute for Data Science Lunchtime Seminar Series Sensitivity, Uncertainty, and Automatic Differentiation	October 2018
Berkeley Institute for Data Science Lunchtime Seminar Series Bayesian Inference and Inverse Problems	July 2018
StanCon Automatic Robustness Measures in Stan	January 2018
Berkeley BSTARS Conference How Bad Could it Be? Worst-case Prior Sensitivity Estimates for Variational Bayes	March 2017
Berkeley BSTARS Conference Measuring Robustness with Variational Bayes	March 2016
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

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

University 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

- 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

University of California, Berkeley, CA, USA

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

Prison University Project, San Quentin State Prison, CA, USA

- Volunteer math teacher Fall 2015, Spring 2016, Fall 2017

Kokshetau Elementary School #3, Kokshetau, Akhmola, Kazakhstan

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

University of Illinois, Urbana-Champaign, IL, USA

- Teaching Assistant, Mechanics of Materials Lab
- Teaching Assistant, Introduction to Statics

Fall 1999
Spring 1999