

# Ryan Giordano

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## Education:

### UC Berkeley

September 2013-Present

#### Statistics, PhD candidate

Advised by Michael Jordan and Jon McAuliffe. Coursework includes probability theory, theoretical statistics, applied statistics, composite likelihoods, graphical models, statistical physics, and convex optimization.

### London School of Economics (two year program)

2006-2008

#### MSc in Econometrics, Distinction, Converted GPA 3.94

Coursework included econometric theory, mathematical economics, computational learning theory, discrete math and complexity, econometric analysis, game theory.

### University of Illinois Urbana-Champaign

1997-2002

#### BS Engineering Mechanics *cum laude*, BS Mathematics, GPA 3.62

Coursework included real and complex analysis, partial differential equations, computational methods in mechanics, continuum mechanics, dynamics, linear and abstract algebra, differential geometry, and Russian.

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## Selected Writing and Publications:

- Ryan Giordano, Tamara Broderick, Rachael Meager, Jonathan Huggins, and Michael Jordan. "Fast robustness quantification with variational Bayes." ICML #data4good workshop, 2016.
- Ryan Giordano, Tamara Broderick, and Michael Jordan. Linear response methods for accurate covariance estimates from mean field variational bayes. In Advances in Neural Information Processing Systems, 2015.
- Winther, Rasmus Grønfeldt, Ryan Giordano, Michael D. Edge, and Rasmus Nielsen. The mind, the lab, and the field: Three kinds of populations in scientific practice. Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences, 2015
- Google Internal Publications
  - "Mantel Haenszel Unchained", presented at Google's StatFoo statistics conference
  - Thirty-three internal Google "one-pager" research reports
- Diagnosing Simpson's Paradox and Rate Statistics Using DANSR, Poster, Young Statisticians Sub-Conference of ISI (YSI), Dublin, 2011

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## Academic Awards and Honors:

- Neural Information Processing Systems spotlight paper (2015)
- Outstanding graduate student instructor award (2015)
- Google Operating Committee award (2010)
- Peace Corps "Success Story" for a congressional report (2008)
- National Science Foundation Graduate Research Fellowship, Honorable Mention (2006)
- Undergraduate mechanics research conference, best project and presentation (2002)
- Seely, Sinclair, Stippes, TAM Merit Scholarships (1998-2002)
- Engineering Open House presentation, first place (2002)

## Work Experience:

### Google, Mountain View, California

February 2009 – May 2013, Summer 2014

#### Ads Quality Data Analysis, Senior Engineer

- Tech lead of a team of statisticians measuring and modeling the long-term reaction of users to advertising quality. Lead statistician on a team of engineers modeling, measuring and improving long-term advertiser return on investment. Consultant on many projects related to spam detection, advertising quality, and search quality.
- Created innovative statistical techniques to measure average proportional changes between hundreds of millions of noisy observations. Implemented novel pointwise false-discovery rate analysis for multiple hypothesis testing. Invented a method-of-moments technique for detecting Simpson's Paradox in enormous data sets. Additional experience with Gibbs sampling, GLMs, and regression regularization.
- Wrote software to manage and analyze enormous data sets (billions of rows and terabytes of data). Productionised numerous complex statistical analysis for use by non-statisticians. Wrote libraries for sanitizing, joining, and processing server log data in a parallel computing environment.

### Macquarie Group, London

June 2008 – December 2008

#### Risk Management Intern

- Implemented a pricing model for credit default swaps from the literature. Used Bloomberg data to quantify historical movements in credit default swaps in order to measure the potential risk incurred by the prop trading desk.

### LSE Financial Markets Group, London

July 2007 – September 2007

#### Research Assistant

- Wrote software in Gauss to implement a novel maximum likelihood estimator for bivariate binary probit models that allows simultaneous interaction terms to be measured. The software was used to estimate the impact of innovative activity on credit constraints in French firms.

### United States Peace Corps, Kokshetau, Kazakhstan

June 2004 – June 2006

#### Education Volunteer

- Designed and executed an experimental program to teach math in English in secondary schools. Created a curriculum, wrote and published a textbook, and taught the program to four groups of seventh and eighth graders. Selected by the Kazakhstan country director as a representative Peace Corps "Success Story" for a congressional report.

### Hewlett-Packard, Boise, Idaho

Oct 2002 – May 2004

#### Lifetest Coordinator and Reliability Engineer

- Executed a pilot program of a new kind of holistic personal printer test, which included creating a new style of database, script generation programs, failure-reporting, and radically new operating procedures. Expanded the pilot program into a large-scale division-wide standard.

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## Computer Skills

- Github page: <https://github.com/rqiordan>
- Language experience: R, Python, Julia, C++, LaTeX, SQL, and more.
- Strong practitioner and proponent of readable and testable code.
- Able to learn new programming languages quickly and independently.
- UNIX-based operating systems.

## Foreign Languages

- Russian: Advanced-High in Peace Corps aptitude test
- Kazakh: Advanced-Mid in Peace Corps aptitude test
- Spanish: Intermediate