# Dustin Tran

Ph.D. Student
Columbia University
Department of Computer Science
New York, NY

dustin@cs.columbia.edu
http://www.dustintran.com/

## Education

Ph.D. Computer Science, Columbia University — 2016–
Advisors: David M. Blei, Andrew Gelman

M.S. Computational Science & Engineering, Harvard University — 2014–2015
Advisor: Edoardo M. Airoldi

B.A. (Hon.) Mathematics, Statistics, University of California, Berkeley — 2010–2014

## Employment

Visiting Researcher — 2016
Graduate School of Business, Stanford University
Supervisor: Susan Athey
Collaborators: Matt Hoffman, Kevin Murphy

Visiting Researcher — 2015
Department of Statistics and Computer Science, Columbia University
Supervisors: David M. Blei, Andrew Gelman

## Awards

Adobe Research Fellowship ($10,000) — 2016

Columbia SEAS Fellowship (Full funding) — 2016–

LinkedIn Economic Graph Challenge — 2015

Harvard GSAS Fellowship (Full funding) — 2015

Dorothea Klumpke Roberts Prize in Mathematics — 2014

Regents' and Chancellor's Scholarship (Full funding) — 2010–2014

Rose Hills Foundation Science & Engineering Grant ($5,000) — 2013

Cal Alumni Leadership Scholarship ($2,500) — 2010

## Publications

PREPRINTS

1. **D. Tran** and D.M. Blei. Discussion of "Fast Approximate Inference for Arbitrarily Large Semiparametric Regression Models via Message Passing". *Journal of the American Statistical Association*, To appear.
2. **D. Tran**, A. Kucukelbir, A. Gelman, B. Carpenter, and D.M. Blei. Stan: Generalizing and automating variational inference.
3. A. Kucukelbir, **D. Tran**, R. Ranganath, A. Gelman, and D.M. Blei. Automatic differentiation variational inference.
4. **D. Tran**, P. Toulis, and E.M. Airoldi. Stochastic gradient descent methods for estimation with large data sets.

Refereed Conference Papers

5. R. Ranganath, **D. Tran**, J. Altosaar, and D.M. Blei. Operator variational inference. In *Neural Information Processing Systems*, 2016.
6. R. Ranganath, **D. Tran**, and D.M. Blei. Hierarchical variational models. In *International Conference on Machine Learning*, 2016.
7. **D. Tran**, M. Kim, and F. Doshi-Velez. Spectral M-estimation with application to hidden Markov models. In *Artificial Intelligence and Statistics*, 2016.
8. P. Toulis, **D. Tran**, and E.M. Airoldi. Towards stability and optimality in stochastic gradient descent. In *Artificial Intelligence and Statistics*, 2016.
9. **D. Tran**, R. Ranganath, and D.M. Blei. The variational Gaussian process. In *International Conference on Learning Representations*, 2016.
10. **D. Tran**, D.M. Blei, and E.M. Airoldi. Copula variational inference. In *Neural Information Processing Systems*, 2015.

## Software

1. Edward: A library for probabilistic modeling, inference, and criticism 2016–
   **D. Tran**, A. Dieng, A. Kucukelbir, D. Liang, M. Rudolph, and D.M. Blei.
2. Stan: A probabilistic programming language 2012–
   A. Gelman, B. Carpenter, M. Hoffman, D. Lee, B. Goodrich, M. Betancourt, M. Brubaker, J. Guo, P. Li, A. Riddell, M. Inacio, J. Arnold, M. Morris, R. Trangucci, R. Goedman, B. Lau, J. Gabry, A. Kucukelbir, R. Grant, **D. Tran**, K. Sakrejda, A. Vehtari, R. Lei, and S. Weber.
3. sgd: An R package for large-scale estimation 2015
   **D. Tran**, P. Toulis, and E.M. Airoldi.

## Teaching

1. Teaching Assistant | Columbia University 2016
   STAT/CS 6509: Foundations of Graphical Models

2. Teaching Fellow | Harvard University 2015
   AM 205: Advanced Scientific Computing–Numerical Methods
3. Teaching Assistant | University of California, Berkeley 2013
   MATH 10B: Methods in Calculus, Statistics, Combinatorics
4. Teaching Assistant | University of California, Berkeley 2011
   MATH 128A: Numerical Analysis

## Professional Service

JOURNAL REVIEWING

| | |
|---|---|
| Foundations and Trends in Machine Learning | 2016 |
| Journal of Machine Learning Research | 2016 |
| Statistics and Computing | 2016 |
| Transactions on Pattern Analysis and Machine Intelligence | 2016 |

CONFERENCE REVIEWING

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|---|---|
| Artificial Intelligence and Statistics | 2017 |
| International Conference on Learning Representations | 2016, 2017 |
| International Conference on Machine Learning | 2016 |
| Knowledge Discovery and Data Mining | 2016 |
| Neural Information Processing Systems | 2016 |
| Uncertainty in Artificial Intelligence | 2016 |

WORKSHOP ORGANIZATION

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|---|---|
| NIPS Workshop: Advances in Approximate Bayesian Inference | 2016 |
| NIPS Workshop: Advances in Approximate Bayesian Inference | 2015 |

PROFESSIONAL MEMBERSHIPS

American Statistical Association

Association of Computing Machinery

Bernoulli Society

Institute of Electrical and Electronics Engineers

Institute for Mathematical Statistics

International Society for Bayesian Analysis

Royal Statistical Society

## Invited Talks and Panels

1. NIPS Workshop: Advances in Approximate Bayesian Inference – BARCELONA, ES 2016
2. NIPS Workshop: Bayesian Nonparametrics – BARCELONA, ES 2016
3. Twitter Cortex – CAMBRIDGE, MA 2016
4. Google Brain – MOUNTAIN VIEW, CA 2016
5. International Conference on Learning Representations – SAN JUAN, PR 2016
6. PPAML/DARPA Meeting – NEW YORK, NY 2016
7. Harvard University – CAMBRIDGE, MA 2016
8. NIPS Workshop: Advances in Approximate Bayesian Inference – MONTREAL, CA 2015
9. NIPS Workshop: Black Box Learning and Inference – MONTREAL, CA 2015
10. Massachusetts Institute of Technology – CAMBRIDGE, MA 2015
11. Harvard University – CAMBRIDGE, MA 2015
12. Microsoft Research – CAMBRIDGE, MA 2015
13. University of Connecticut – STORRS, CT 2015
14. Max Planck Institute for Intelligent Systems – TÜBINGEN, DE 2015