

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 Advisors: David M. Blei, Andrew Gelman	2016–
M.S. Computational Science & Engineering, Harvard University Advisor: Edoardo M. Airoidi	2014–2015
B.A. (Hon.) Mathematics, Statistics, University of California, Berkeley	2010–2014

Employment

Research Intern OpenAI	May 2017 –
Visiting Researcher Graduate School of Business, Stanford University Collaborators: Susan Athey, Matt Hoffman, Kevin Murphy	May 2016 – Aug 2016
Visiting Researcher Department of Statistics and Computer Science, Columbia University Supervisors: David M. Blei, Andrew Gelman	2015

Awards

Google Ph.D. Fellowship in Machine Learning (\$34,000 + tuition/fees)	2017–
Columbia SEAS Fellowship (Full funding)	2016–
Adobe Research Fellowship (\$10,000)	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**, D.M. Blei. Implicit causal models.
2. A. Gelman, A. Vehtari, P. Jylänki, T. Sivula, **D. Tran**, S. Sahai, P. Blomstedt, J.P. Cunningham, D. Schiminovich, and C. Robert. Expectation propagation as a way of life: A framework for Bayesian inference on partitioned data.
3. **D. Tran**, A. Kucukelbir, A.B. Dieng, D. Liang, M. Rudolph, and D.M. Blei. Edward: A library for probabilistic modeling, inference, and criticism.
4. **D. Tran**, F.J.R. Ruiz, S. Athey, and D.M. Blei. Model criticism for Bayesian causal inference.
5. **D. Tran** and V. Mansinghka. Edward: Probabilistic programming with deep learning applications.
6. **D. Tran**, A. Kucukelbir, A. Gelman, B. Carpenter, and D.M. Blei. Stan: Generalizing and automating variational inference.

JOURNAL ARTICLES

7. **D. Tran**, P. Toulis, and E.M. Airoidi. Stochastic gradient descent methods for estimation with large data sets. *Journal of Statistical Software*, To appear.
8. **D. Tran** and D.M. Blei. Comment, “Fast Approximate Inference for Arbitrarily Large Semiparametric Regression Models via Message Passing”. *Journal of the American Statistical Association*, 112(517):156–158, 2017.
9. A. Kucukelbir, **D. Tran**, R. Ranganath, A. Gelman, and D.M. Blei. Automatic differentiation variational inference. *Journal of Machine Learning Research*, 18(14):1–45, 2017.

CONFERENCE ARTICLES

10. **D. Tran**, R. Ranganath, D.M. Blei. Deep and hierarchical implicit models. In *Neural Information Processing Systems*, 2017.
11. A.B. Dieng, **D. Tran**, R. Ranganath, J. Paisley, and D.M. Blei. The χ divergence for approximate inference. In *Neural Information Processing Systems*, 2017.
12. **D. Tran**, M.D. Hoffman, R.A. Saurous, E. Brevdo, K. Murphy, and D.M. Blei. Deep probabilistic programming. In *International Conference on Learning Representations*, 2017.
13. R. Ranganath, J. Alotaibi, **D. Tran**, and D.M. Blei. Operator variational inference. In *Neural Information Processing Systems*, 2016.
14. R. Ranganath, **D. Tran**, and D.M. Blei. Hierarchical variational models. In *International Conference on Machine Learning*, 2016.
15. **D. Tran**, M. Kim, and F. Doshi-Velez. Spectral M-estimation with application to hidden Markov models. In *Artificial Intelligence and Statistics*, 2016.
16. P. Toulis, **D. Tran**, and E.M. Airoidi. Towards stability and optimality in stochastic gradient descent. In *Artificial Intelligence and Statistics*, 2016.

17. **D. Tran**, R. Ranganath, and D.M. Blei. The variational Gaussian process. In *International Conference on Learning Representations*, 2016.
18. **D. Tran**, D.M. Blei, and E.M. Airoldi. Copula variational inference. In *Neural Information Processing Systems*, 2015.

Software

1. Observations: A one line API for loading standard data sets in machine learning 2017–
D. Tran, A. Kucukelbir, A.B. Dieng, D. Liang, M. Rudolph, and D.M. Blei.
2. Edward: A library for probabilistic modeling, inference, and criticism 2016–
D. Tran, A. Kucukelbir, A.B. Dieng, D. Liang, M. Rudolph, and D.M. Blei.
3. 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.
4. 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– |
| Information Sciences | 2016– |
| Journal of Machine Learning Research | 2016– |
| Statistics and Computing | 2016– |
| Transactions on Pattern Analysis and Machine Intelligence | 2016– |

CONFERENCE REVIEWING

Association for the Advancement of Artificial Intelligence	2018
Artificial Intelligence and Statistics	2017, 2018
International Conference on Learning Representations	2016, 2017, 2018
International Conference on Machine Learning	2016, 2017
Knowledge Discovery and Data Mining	2016
Neural Information Processing Systems	2016, 2017
Uncertainty in Artificial Intelligence	2016, 2017

WORKSHOP ORGANIZATION

NIPS Workshop: Advances in Approximate Bayesian Inference	2017
ICML Workshop: Implicit Generative Models	2017
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

MENTORING

Akshay Khatri (M.S. Columbia University, 2017)

Invited Talks and Panels

1. Workshop on Deep Probabilistic Models – CAMBRIDGE, UK	2017
2. Gaussian Process Summer School – SHEFFIELD, UK	2017
3. Probabilistic Programming Meetup – MENLO PARK, CA	2017
4. Diana-HEP Meeting – GENEVA, CH	2017
5. 2nd S2I2 HEP/CS Workshop – PRINCETON, NJ	2017
6. Pfizer – BOSTON, MA	2017

7. The New York Academy of Sciences – NEW YORK, NY 2017
8. Etsy – BROOKLYN, NY 2017
9. PPAML/DARPA Meeting – ARLINGTON, VA 2017
10. New York City Machine Learning Meetup – NEW YORK, NY 2017
11. Johns Hopkins University – BALTIMORE, MD 2017
12. NIPS Workshop: Advances in Approximate Bayesian Inference – BARCELONA, ES 2016
13. NIPS Workshop: Practical Bayesian Nonparametrics – BARCELONA, ES 2016
14. Netflix Research – LOS GATOS, CA 2016
15. OpenAI – SAN FRANCISCO, CA 2016
16. Twitter Cortex – CAMBRIDGE, MA 2016
17. Google Brain – MOUNTAIN VIEW, CA 2016
18. International Conference on Learning Representations – SAN JUAN, PR 2016
19. PPAML/DARPA Meeting – NEW YORK, NY 2016
20. Harvard University – CAMBRIDGE, MA 2016
21. NIPS Workshop: Advances in Approximate Bayesian Inference – MONTREAL, CA 2015
22. NIPS Workshop: Black Box Learning and Inference – MONTREAL, CA 2015
23. Massachusetts Institute of Technology – CAMBRIDGE, MA 2015
24. Harvard University – CAMBRIDGE, MA 2015
25. Microsoft Research – CAMBRIDGE, MA 2015
26. University of Connecticut – STORRS, CT 2015
27. Max Planck Institute for Intelligent Systems – TÜBINGEN, DE 2015