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

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Education

Ph.D. Computer Science, Columbia University Advisors: David M. Blei, Andrew Gelman	2016–
M.S. Computational Science & Engineering, Harvard University Advisor: Edoardo M. Airoldi	2014–2015
B.A. (Hon.) Mathematics, Statistics, University of California, Berkeley	2010–2014
Employment	
Visiting Researcher Graduate School of Business, Stanford University Collaborators: Susan Athey, Matt Hoffman, Kevin Murphy	2016
Visiting Researcher Department of Statistics and Computer Science, Columbia University Supervisors: David M. Blei, Andrew Gelman	2015
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. 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.

- 2. **D. Tran**, R. Ranganath, D.M. Blei. Deep and hierarchical implicit models.
- 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. A.B. Dieng, **D. Tran**, R. Ranganath, J. Paisley, and D.M. Blei. The χ divergence for approximate inference.
- 6. **D. Tran**, A. Kucukelbir, A. Gelman, B. Carpenter, and D.M. Blei. Stan: Generalizing and automating variational inference.

JOURNAL ARTICLES

- 7. **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.
- 8. A. Kucukelbir, **D. Tran**, R. Ranganath, A. Gelman, and D.M. Blei. Automatic differentiation variational inference. *Journal of Machine Learning Research*, To appear.
- 9. **D. Tran**, P. Toulis, and E.M. Airoldi. Stochastic gradient descent methods for estimation with large data sets. *Journal of Statistical Software*, To appear.

CONFERENCE ARTICLES

- 10. **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.
- 11. R. Ranganath, J. Altosaar, **D. Tran**, and D.M. Blei. Operator variational inference. In *Neural Information Processing Systems*, 2016.
- 12. R. Ranganath, **D. Tran**, and D.M. Blei. Hierarchical variational models. In *International Conference on Machine Learning*, 2016.
- 13. **D. Tran**, M. Kim, and F. Doshi-Velez. Spectral M-estimation with application to hidden Markov models. In *Artificial Intelligence and Statistics*, 2016.
- 14. P. Toulis, **D. Tran**, and E.M. Airoldi. Towards stability and optimality in stochastic gradient descent. In *Artificial Intelligence and Statistics*, 2016.
- 15. **D. Tran**, R. Ranganath, and D.M. Blei. The variational Gaussian process. In *International Conference on Learning Representations*, 2016.
- 16. **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 D. Tran , A. Kucukelbir, A.B. Dieng, D. Liang, M. Rudolph, and D.M. Blei.	2016–
2	. Stan: A probabilistic programming language A. Gelman, B. Carpenter, M. Hoffman, D. Lee, B. Goodrich, M. Betancourt, M. E P. Li, A. Riddell, M. Inacio, J. Arnold, M. Morris, R. Trangucci, R. Goedman, I A. Kucukelbir, R. Grant, D. Tran , K. Sakrejda, A. Vehtari, R. Lei, and S. Weber.	
3	. sgd: An R package for large-scale estimation D. Tran , P. Toulis, and E.M. Airoldi.	2015–
Tea	ching	
1	. Teaching Assistant Columbia University STAT/CS 6509: Foundations of Graphical Models	2016
2	. Teaching Fellow Harvard University AM 205: Advanced Scientific Computing–Numerical Methods	2015
3	. Teaching Assistant University of California, Berkeley MATH 10B: Methods in Calculus, Statistics, Combinatorics	2013
4	. Teaching Assistant University of California, Berkeley MATH 128A: Numerical Analysis	2011
Pro	ofessional Service	
Jour	RNAL REVIEWING	
Fo	oundations and Trends in Machine Learning	2016–
In	formation Sciences	2016–
Jo	ournal of Machine Learning Research	2016–
St	atistics and Computing	2016–
Ti	ransactions on Pattern Analysis and Machine Intelligence	2016–
Con	FERENCE REVIEWING	
A	rtificial Intelligence and Statistics	2017
In	ternational Conference on Learning Representations	2016, 2017
In	ternational Conference on Machine Learning	2016, 2017
K	nowledge Discovery and Data Mining	2016
N	eural Information Processing Systems	2016
U	ncertainty in Artificial Intelligence	2016, 2017
Wor	RKSHOP ORGANIZATION	

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. The New York Academy of Sciences – NEW YORK, NY	2017
2. Etsy – Brooklyn, ny	2017
3. PPAML/DARPA Meeting – ARLINGTON, VA	2017
4. New York City Machine Learning Meetup – NEW YORK, NY	2017
5. Johns Hopkins University – BALTIMORE, MD	2017
6. NIPS Workshop: Advances in Approximate Bayesian Inference – BARCELONA, ES	2016
7. NIPS Workshop: Practical Bayesian Nonparametrics – BARCELONA, ES	2016
8. Netflix Research – LOS GATOS, CA	2016
9. OpenAI – san francisco, ca	2016
10. Twitter Cortex – CAMBRIDGE, MA	2016
11. Google Brain – MOUNTAIN VIEW, CA	2016
12. International Conference on Learning Representations – SAN JUAN, PR	2016
13. PPAML/DARPA Meeting – NEW YORK, NY	2016
14. Harvard University – CAMBRIDGE, MA	2016
15. NIPS Workshop: Advances in Approximate Bayesian Inference – MONTREAL, CA	2015
16. NIPS Workshop: Black Box Learning and Inference – MONTREAL, CA	2015

17.	Massachusetts Institute of Technology – CAMBRIDGE, MA	2015
18.	Harvard University – CAMBRIDGE, MA	2015
19.	Microsoft Research – CAMBRIDGE, MA	2015
20.	University of Connecticut – STORRS, CT	2015
21.	Max Planck Institute for Intelligent Systems – TÜBINGEN, DE	2015