

# Ryan P. Adams

Department of Computer Science  
Princeton University  
35 Olden Street  
Princeton, New Jersey 08540  
email: [rpa@princeton.edu](mailto:rpa@princeton.edu)  
url: <http://www.cs.princeton.edu/~rpa>  
Citizenship: United States

## Academic Positions

- 2017– Professor of Computer Science  
**Department of Computer Science, Princeton University**
- 2011–2016 Assistant Professor of Computer Science  
**School of Engineering and Applied Sciences, Harvard University**
- 2009–2011 Canadian Institute for Advanced Research Junior Fellow  
**Department of Computer Science, University of Toronto**
- 2004–2009 Gates Cambridge Scholar  
**Cavendish Laboratory (Department of Physics), University of Cambridge**

## Recent Industry Positions

- 2016– Research Scientist  
**Google Brain**
- 2015–2016 Head of Advanced Technologies Group  
**Twitter**
- 2013–2015 Co-Founder and CEO  
**Whetlab LLC** (Acquired by Twitter in June 2015)

## Education

- 2009 Ph.D., Physics, **University of Cambridge**  
*Kernel methods for nonparametric Bayesian inference of probability densities and point processes*  
Supervisor: Prof. David J.C. MacKay, FRS
- 2004 B.S., Electrical Engineering and Computer Science, **Massachusetts Institute of Technology**

## Honors & Awards

- 2015 Alfred P. Sloan Fellowship
- 2014 Best Paper, 30th Conference on Uncertainty in Artificial Intelligence (*with Dougal Maclaurin*)

- 2010 Best Paper, 13th International Conference on Artificial Intelligence and Statistics (*with Hanna Wallach & Zoubin Ghahramani*)
- 2010 Honorable Mention, International Society for Bayesian Analysis Leonard J. Savage Award for Outstanding Dissertation in Bayesian Theory and Methods
- 2009 Honorable Mention, Best Paper, 26th International Conference on Machine Learning (*with Zoubin Ghahramani*)
- 2009 Honorable Mention, Best Student Paper, 26th International Conference on Machine Learning (*with Iain Murray & David J.C. MacKay*)

## Grants & Fellowships

- 2014-17 NSF IIS, *RI: Small: Parallel Methods for Large-Scale Probabilistic Inference*
- 2015-16 Adobe Research Gift
- 2014-15 Harvard Mind/Brain/Behavior Interfaculty Initiative, *Deep Phenotyping to Probe the Genetic Basis for Behavior*, with Sandeep Datta and Hopi Hoekstra
- 2014-17 Simons Collaboration on the Global Brain Research Award, *Decoding Internal State to Predict Behavior*, with Bernardo Sabatini and Sandeep Robert Datta
- 2014-16 Lawrence Berkeley Laboratory (Department of Energy Subcontract), *Scalable Statistics and Machine Learning for Data-Centric Science*
- 2014-16 Harvard/MIT Joint Research Grants Program In Basic Neuroscience, *New Methods for Social Behavior Analysis* with Sandeep Robert Datta
- 2013-16 Samsung Electronics, *A combined theory and experimental approach towards the discovery of novel blue organic light-emitting diode materials* with Alán Aspuru-Guzik
- 2013-15 Analog Devices Research Gift, *Generative Vision with Novel Transducers: Modeling, Learning, and Inference*
- 2012-14 DARPA Young Faculty Award, *Developing New Methods of Multi-Core Statistical Inference Towards Rapid Data Fusion and Information Extraction* YFA N66001-12-1-4219.
- 2012-14 Amazon AWS in Research Grant, *Parallel Approaches to Large-Scale Bayesian Optimization*
- 2009-11 Canadian Institute for Advanced Research Junior Fellowship
- 2004-09 United Kingdom Overseas Research Scholarship
- 2004-09 Gates Cambridge Scholarship

## Teaching

- Spring 2015 Harvard University CS181, *Machine Learning*
- Spring 2014 Harvard University CS181, *Machine Learning*
- Spring 2014 Harvard Extension School CSCI E-181, *Machine Learning*
- Fall 2013 Harvard University CS281, *Advanced Machine Learning*
- Spring 2013 Harvard University CS181, *Intelligent Machines: Perception, Learning, and Uncertainty*
- Spring 2013 Harvard Extension School CSCI E-181, *Intelligent Machines: Perception, Learning, and Uncertainty*
- Fall 2011 Harvard University CS281, *Advanced Machine Learning*
- 1998-2000 Head Coach, Wellesley College Water Polo Team
- 1997-1998 Assistant Coach, Massachusetts Institute of Technology Women's Water Polo Team

## Outside Activities

2015-16 Co-host, *Talking Machines* podcast: <http://www.thetalkingmachines.com/>

## Reviewing & Service

### Editorial Boards

2017- Associate Editor of *IEEE Transactions on Pattern Analysis and Machine Intelligence*  
 2013-17 Associate Editor of *Statistics and Computing*  
 2012 Guest Editor of *IEEE Transactions on Pattern Analysis and Machine Intelligence* Special Issue on Bayesian Nonparametrics

### Senior Program Committees

2017 Area Chair, Neural Information Processing Systems (NIPS)  
 2017 Funding Co-Chair, International Conference on Machine Learning (ICML)  
 2017 Area Chair, International Conference on Artificial Intelligence and Statistics (AISTATS)  
 2017 Area Chair, AAAI Conference on Artificial Intelligence (AAAI)  
 2016 Conference on Uncertainty in Artificial Intelligence (UAI)  
 2016 Area Chair, International Conference on Artificial Intelligence and Statistics (AISTATS)  
 2016 Area Chair, International Conference on Machine Learning (ICML)  
 2016 Area Chair, International Conference on Learning Representations (ICLR)  
 2015 NIPS Workshop on Bayesian Optimization  
 2015 NIPS Workshop on Statistical Methods for Understanding Neural Systems  
 2015 Area Chair, International Conference on Machine Learning (ICML)  
 2014- Steering Committee, New England Machine Learning Day  
 2014 NIPS Workshop on Bayesian Optimization in Academia and Industry  
 2014 Area Chair, Neural Information Processing Systems (NIPS)  
 2014 Area Chair, International Conference on Machine Learning (ICML)  
 2013 Area Chair, Neural Information Processing Systems (NIPS)  
 2012 Conference on Uncertainty in Artificial Intelligence (UAI)  
 2012 IMS/ASA Spring Research Conference on Statistics in Industry and Technology  
 2012 New England Machine Learning Day  
 2012 Area Chair, International Conference on Artificial Intelligence and Statistics (AISTATS)  
 2011 NIPS Workshop on Bayesian Nonparametrics  
 2010 NIPS Workshop on Monte Carlo Methods for Bayesian Inference in Modern Applications  
 2010 NIPS Workshop on Transfer Learning Via Deep Generative Models

### Journal Reviewing

Neural Computation; Journal of Machine Learning Research; Journal of the American Statistical Association; Technometrics; IEEE Transactions on Information Theory; IEEE Transactions on Neural Networks; IEEE Transactions on Pattern Analysis and Machine Intelligence; IEEE Transactions on Signal Processing; IEEE Transactions on Systems, Man and Cybernetics, Part B; ACM Transactions on Modeling and Computer Simulation; Environmetrics; Pattern Recognition; Computers and Mathematics with Applications; Data Mining and Knowledge Discovery; Statistics and Computing

## Conference Reviewing

International Conference on Machine Learning (ICML); International Conference on Artificial Intelligence and Statistics (AISTATS); Advances in Neural Information Processing Systems (NIPS); ACM Symposium on User Interface Software and Technology (UIST); SIGGRAPH; USENIX Conference on File and Storage Technologies (FAST); AAAI Conference on Artificial Intelligence (AAAI); ACM Conference on Knowledge Discovery and Data Mining (KDD); Conference on Uncertainty in Artificial Intelligence (UAI); International Conference on Learning Representations (ICLR)

## Within Princeton and Harvard

- 2013–14 Applied Mathematics Committee for Undergraduate Studies
- 2013 Herchel Smith Undergraduate Research Fellowship Review and Selection Committee
- 2012–13 Neurobiology Standing Committee for Harvard College
- 2011–2012 Advisory Board for SEAS Graduate Program in Computational Science and Engineering

## Invited Talks

### Recent Research Talks

- 30 May 2017 CIFAR Energy Materials and Machine Learning Workshop, MIT
- 10 May 2017 Machine Learning Colloquium, MIT
- 1 May 2017 Simons Institute Workshop on Computational Challenges in Machine Learning, Berkeley
- 28 Mar 2017 Harvard Working Conference on Materials and Data Science
- 2 Feb 2017 LIDS Student Colloquium, MIT
- 12 Dec 2016 NIPS Workshop on Bayesian Deep Learning, Barcelona, Spain
- 11 Dec 2016 NIPS Workshop on Non-Convex Optimization, Barcelona, Spain
- 24 Jun 2016 ICML Workshop on AutoML, New York, NY
- 12 Jun 2016 Deep Learning Workshop, MIT
- 30 Mar 2016 Data Learning and Inference (DALI), Sestri Levante, Italy
- 12 Dec 2015 NIPS Workshop on Scalable Monte Carlo Methods, Montreal, QC
- 12 Nov 2015 Broad Institute, Cambridge, MA
- 11 Nov 2015 Computational Linguistics and Information Processing Group, University of Maryland, College Park, MD
- 10 Nov 2015 Center for Language and Speech Processing, Johns Hopkins University, Baltimore, MD
- 4 Oct 2015 SOSP LADIS Workshop, Monterey, CA
- 9 Aug 2015 Joint Statistical Meetings, Seattle, WA
- 10 Jul 2015 ICML Workshop on Constructive Machine Learning, Lille, France
- 25 May 2015 Re.Work Deep Learning Summit, Boston, MA
- 20 May 2015 Microsoft Research New England, Cambridge, MA
- 15 May 2015 Center for Brain Science Retreat, Harvard
- 27 Apr 2015 Next.ML Boston, Cambridge, MA
- 17 Apr 2015 Artificial Intelligence Seminar, Cornell University
- 31 Mar 2015 Center for Brains, Minds and Machines, Harvard/MIT
- 19 Dec 2014 Google, Mountain View, CA
- 19 Dec 2014 Yahoo, Sunnyvale, CA
- 18 Dec 2014 Facebook, Menlo Park, CA

- 13 Nov 2014 Department of Computer Science, Princeton University
- 5 Nov 2014 Department of Statistics, Columbia University
- 27 Oct 2014 Department of Computation and Neural Systems, California Institute of Technology
- 12 Sep 2014 Department of Statistics and Data Mining, University of Texas
- 6 May 2014 Machine Learning Seminar, University of Washington
- 5 May 2014 Department of Statistics, University of Washington
- 19 Apr 2014 Department of Statistics, Harvard University
- 17 Apr 2014 Department of Mathematics and Statistics, Boston University
- 17 Mar 2014 International Biometric Society (ENAR), Baltimore
- 15 Jan 2014 Machine Learning Seminar, Duke University
- 6 Jan 2014 Fifth International IMS/ISBA Joint Meeting (MCMSki IV), Chamonix, France

### Invited Tutorials

- 23 Feb 2015 *Bayesian Nonparametrics*  
Sydney Machine Learning Summer School
- 14 Aug 2014 *Bayesian Optimization for Machine Learning*  
CIFAR Neural Computation and Adaptive Perception Summer School
- 13 Sep 2012 *Introduction to Gaussian Processes*  
Institute for Computational and Experimental Research in Mathematics, Brown University
- 14 Aug 2010 *Monte Carlo Methods for Inference and Learning*  
CIFAR Neural Computation and Adaptive Perception Summer School

### Talks for General Audiences

- 8 Feb 2016 *Using Intelligent Algorithms to Design Intelligent Algorithms*  
Science by the Pint
- 24 Jan 2014 *Taking Humans Out of the Machine Learning Loop*  
IACS Symposium on Weathering the Data Storm: The Promises and Challenges of Data Science
- 9 Nov 2009 *The Next Big Question: How Do We Think?*  
CIFAR Lunar Circle Dinner
- 17 Jun 2009 *Building Machines That Can See: Lessons From Human Vision*  
IdeaCity 2009
- 14 Apr 2009 *Perceiving the World with Statistical Machine Learning*  
CIFAR Junior Fellow Academy

## Academic Supervision

### Postdoctoral Fellows

- 2012–14 Finale Doshi-Velez
- 2013–15 Shamim Nemati
- 2013–15 Jasper Snoek, CRCS Fellow
- 2014–16 David Duvenaud

2014–16 Matthew Johnson  
 2014–16 José Miguel Hernández Lobato

#### Primary Advisor

2012–15 Michael Gelbart, Harvard Biophysics  
 2013–16 Dougal Maclaurin, Harvard Physics  
 2012–16 Oren Rippel, MIT Mathematics  
 2012– Andrew Miller, Harvard Computer Science  
 2014– Yakir Reshef, Harvard Computer Science, MD/PhD  
 2014– Ardavan Saeedi, MIT EECS

#### Co-Advisor / Secondary Supervisor

2012–14 Elaine Angelino, Harvard Computer Science with Margo Seltzer  
 2013–16 Scott Linderman, Harvard Computer Science with Leslie Valiant  
 2012–17 SueYeon Chung, Harvard Applied Physics with Haim Sompolinsky

## Publications

### Journal Papers

- 2016 Vinayak Rao, **Ryan P. Adams** and David Dunson. Bayesian Inference for Matérn Repulsive Processes. To appear in *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*. [arXiv:1308.1136](#) [[stat.ME](#)]
- 2016 Jonathan William Hennek, Ashok A. Kumar, Alex B. Wiltschko, Matthew Patton, Si Yi Ryan Lee, Carlo Brugnara, **Ryan P. Adams**, and George M Whitesides. Diagnosis of Iron Deficiency Anemia Using Density-based Fractionation of Red Blood Cells. *Lab on a Chip*. 16:3929–3939.
- 2016 Rafael Gómez-Bombarelli, Jorge Aguilera-Iparraguirre, Timothy D. Hirzel, David Duvenaud, Dougal Maclaurin, Martin A. Blood-Forsythe, Hyun Sik Chae, Markus Einzinger, Dong-Gwang Ha, Tony Wu, Georgios Markopoulos, Soonok Jeon, Hosuk Kang, Hiroshi Miyazaki, Masaki Numata, Sunghan Kim, Wenliang Huang, Seong Ik Hong, Marc Baldo, **Ryan P. Adams**, and Alán Aspuru-Guzik. Design of Efficient Molecular Organic Light-emitting Diodes by a High-throughput Virtual Screening and Experimental Approach. *Nature Materials*. 15:1120–1127.
- 2016 José Miguel Hernández-Lobato, Michael A. Gelbart, **Ryan P. Adams**, Matthew W. Hoffman, and Zoubin Ghahramani. A General Framework for Constrained Bayesian Optimization using Information-based Search. *Journal of Machine Learning Research*. 17:1–53. [arXiv:1511.09422](#) [[stat.ML](#)]
- 2015 Alexander B. Wiltschko, Matthew J. Johnson, Giuliano Iurilli, Ralph E. Peterson, Jesse M. Katon, Stan L. Pashkovski, Victoria E. Abreira, **Ryan P. Adams**, and Sandeep Robert Datta. Mapping Sub-Second Structure in Mouse Behavior. *Neuron*. 88(6):1121–1135.
- 2015 Bobak Shahriari, Kevin Swersky, Ziyu Wang, **Ryan P. Adams**, and Nando de Freitas. Taking the Human Out of the Loop: A Review of Bayesian Optimization. *Proceedings of the IEEE*. 104(1):148–175.
- 2015 Li-Wei H. Lehman, **Ryan P. Adams**, Louis Mayaud, George B. Moody, Atul Malhotra, Roger G. Mark, and Shamim Nemat. A Physiological Time Series Dynamics-Based Approach to Patient Monitoring and

- Outcome Prediction. *IEEE Journal of Biomedical and Health Informatics*. 19(3):1068-1076.
- 2014 Robert Nishihara, Iain Murray and **Ryan P. Adams**. Parallel MCMC with Generalized Elliptical Slice Sampling. *Journal of Machine Learning Research*, 15(Jun):2087–2112. [arXiv:1210.7477](#) [[stat.CO](#)]
- 2013 Henry T.K. Tse, Daniel R. Gossett, Yo Sup Moon, Mahdokht Maseali, Marie Sohsman, Yong Ying, Kimberly Mislick, **Ryan P. Adams**, Jianyu Rao and Dino Di Carlo. Quantitative Diagnosis of Malignant Pleural Effusions by Single-Cell Mechanophenotyping. *Science Translational Medicine*, 5(212):212ra163.
- 2012 Jasper Snoek, **Ryan P. Adams** and Hugo Larochelle. Nonparametric Guidance of Autoencoder Representations using Label Information. *Journal of Machine Learning Research*, 13(Sep):2567-2588.

#### Book Chapters

- 2016 Daniel Tarlow, Alexander Gaunt, **Ryan P. Adams**, and Richard Zemel. Factorizing Shortest Paths with Randomized Optimum Models. In Tamir Hazan, George Papandreou, Daniel Tarlow (Eds.), *Perturbations, Optimization, and Statistics*. MIT Press.
- 2015 Shamim Nemati and **Ryan P. Adams**. Identifying Outcome-Discriminative Dynamics in Multivariate Physiological Cohort Time Series. In Zhe Chen (Ed.), *Advanced State Space Methods for Neural and Clinical Data*. Cambridge University Press.
- 2015 Li-Wei H. Lehman, Matthew J. Johnson, Shamim Nemati, **Ryan P. Adams**, and Roger G. Mark. Bayesian Nonparametric Learning of Switching Dynamics in Cohort Physiological Time Series: Application in Critical Care Patient Monitoring. In Zhe Chen (Ed.), *Advanced State Space Methods for Neural and Clinical Data*. Cambridge University Press.
- 2012 Jeroen C. Chua, Inmar E. Givoni, **Ryan P. Adams** and Brendan J. Frey. Bayesian Painting by Numbers: Flexible Priors for Colour-Invariant Object Recognition. In R. Cipolla, S. Battiato & G. M. Farinella (Eds.), *Machine Learning for Computer Vision*, Studies in Computational Intelligence. Berlin: Springer.

#### Peer Reviewed Conference Papers

- 2017 Andrew Miller, Nicholas J. Foti, and **Ryan P. Adams**. Variational Boosting: Iteratively Refining Posterior Approximations. In *Proceedings of the 34th International Conference on Machine Learning (ICML 2017)*. [arXiv:1611.06585](#) [[stat.ML](#)]
- 2017 Scott W. Linderman, Matthew J. Johnson, Andrew C. Miller, **Ryan P. Adams**, David M. Blei, and Liam Paninski. Recurrent Switching Linear Dynamical Systems. In *Proceedings of the 20th International Conference on Artificial Intelligence and Statistics (AISTATS 2017)*
- 2016 Scott W. Linderman, **Ryan P. Adams**, and Jonathan Pillow. Bayesian Latent Structure Discovery from Multi-neuron Recordings. To appear in *Advances in Neural Information Processing Systems 29 (NIPS 2016)*.
- 2016 Matthew J. Johnson, David Duvenaud, Alex B. Wiltschko, Sandeep R. Datta, and **Ryan P. Adams**. Composing Graphical Models with Neural Networks for Structured Representations and Fast Inference. To appear in *Advances in Neural Information Processing Systems 29 (NIPS 2016)*. [arXiv:1603.06277](#) [[stat.ML](#)]
- 2016 Daniel Hernández-Lobato, José Miguel Hernández-Lobato, Amar, and **Ryan P. Adams**. Predictive Entropy Search for Multi-objective Bayesian Optimization. To Appear in *Proceedings of the 33rd International Conference on Machine Learning (ICML 2016)*. [arXiv:1511.05467](#) [[stat.ML](#)]
- 2016 Ardavan Saeedi, Matthew Hoffman, Matthew Johnson, and **Ryan P. Adams**. The Segmented iHMM: A Simple, Efficient Hierarchical Infinite HMM. In *Proceedings of the 33rd International Conference on Machine Learning (ICML 2016)*. [arXiv:1602.06349](#) [[stat.ML](#)]

- 2016 Qian Wan, **Ryan P. Adams** and Robert D. Howe. Variability and Predictability in Tactile Sensing During Grasping. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA 2016)*.
- 2016 Dougal Maclaurin, David Duvenaud and **Ryan P. Adams**. Early Stopping is Nonparametric Variational Inference. In *Proceedings of the International Conference on Artificial Intelligence and Statistics (AISTATS 2016)*. [arXiv:1504.01344](#) [[stat.ML](#)]
- 2015 Scott Linderman, Matthew Johnson and **Ryan P. Adams**. Dependent Multinomial Models Made Easy: Stick-Breaking with the Pólya-gamma Augmentation. In *Advances in Neural Information Processing Systems 28 (NIPS 2015)*. [arXiv:1506.05843](#) [[stat.ML](#)]
- 2015 David Duvenaud, Dougal Maclaurin, Jorge Aguilera Iparraguirre, Rafael Gómez Bombarelli, Timothy Hirzel, Alán Aspuru-Guzik and **Ryan P. Adams**. Convolutional Networks on Graphs for Learning Molecular Fingerprints. In *Advances in Neural Information Processing Systems 28 (NIPS 2015)*. [arXiv:1509.09292](#) [[stat.ML](#)]
- 2015 Oren Rippel, Jasper Snoek and **Ryan P. Adams**. Spectral Representations for Convolutional Neural Networks. In *Advances in Neural Information Processing Systems 28 (NIPS 2015)*. [arXiv:1506.03767](#) [[stat.ML](#)]
- 2015 Andrew Miller, Albert Wu, Jeffrey Regier, Jon McAuliffe, Prabhat, David Schlegel, Dustin Lang and **Ryan P. Adams**. A Gaussian Process Model of Quasar Spectral Energy Distributions. In *Advances in Neural Information Processing Systems 28 (NIPS 2015)*.
- 2015 Jasper Snoek, Oren Rippel, Kevin Swersky, Ryan Kiros, Nadathur Satish, Narayanan Sundaram, Md. Mostofa Ali Patwary, Prabhat, and **Ryan P. Adams**. Scalable Bayesian Optimization Using Deep Neural Networks. In *Proceedings of the 32nd International Conference on Machine Learning (ICML 2015)*. [arXiv:1502.05700](#) [[stat.ML](#)]
- 2015 Dougal Maclaurin, David Duvenaud and **Ryan P. Adams**. Gradient-based Hyperparameter Optimization through Reversible Learning. In *Proceedings of the 32nd International Conference on Machine Learning (ICML 2015)*. [arXiv:1502.03492](#) [[stat.ML](#)]
- 2015 José Miguel Hernández-Lobato and **Ryan P. Adams**. Probabilistic Backpropagation for Scalable Learning of Bayesian Neural Networks. In *Proceedings of the 32nd International Conference on Machine Learning (ICML 2015)*. [arXiv:1502.05336](#) [[stat.ML](#)]
- 2015 Jeffrey Regier, Andrew Miller, Jon McAuliffe, **Ryan P. Adams**, Matt Hoffman, Dustin Lang, David Schlegel, and Prabhat. Celeste: Variational inference for a generative model of astronomical images. In *Proceedings of the 32nd International Conference on Machine Learning (ICML 2015)*. [arXiv:1506.01351](#) [[astro-ph.IM](#)]
- 2015 José Miguel Hernández-Lobato, Michael A. Gelbart, Matthew W. Hoffman, **Ryan P. Adams**, and Zoubin Ghahramani. Predictive Entropy Search for Bayesian Optimization with Unknown Constraints. In *Proceedings of the 32nd International Conference on Machine Learning (ICML 2015)*. [arXiv:1502.05312](#) [[stat.ML](#)]
- 2015 Finale Doshi-Velez, Byron Wallace and **Ryan P. Adams**. Graph-Sparse LDA: A Topic Model with Structured Sparsity. In *Proceedings of the Twenty-Ninth AAAI Conference on Artificial Intelligence (AAAI-15)*. [arXiv:1410.4510](#) [[stat.ML](#)]
- 2014 Scott Linderman, Christopher Stock and **Ryan P. Adams**. A Framework for Studying Synaptic Plasticity with Neural Spike Train Data. In *Advances in Neural Information Processing Systems 27 (NIPS 2014)*.
- 2014 Dougal Maclaurin and **Ryan P. Adams**. Firefly Monte Carlo: Exact MCMC with Subsets of Data. *Proceedings of the 30th Conference on Uncertainty in Artificial Intelligence (UAI 2014)*. [arXiv:1403.5693](#) [[stat.CO](#), [stat.ML](#)]. **Winner of Best Paper Award**
- 2014 Michael Gelbart, Jasper Snoek and **Ryan P. Adams**. Bayesian Optimization with Unknown Constraints. *Proceedings of the 30th Conference on Uncertainty in Artificial Intelligence (UAI 2014)*. [arXiv:1403.5607](#) [[stat.ML](#)]



- 2014 Elaine Angelino, Eddie Kohler, Amos Waterland, Margo Seltzer and **Ryan P. Adams**. Accelerating MCMC via Parallel Predictive Prefetching. *Proceedings of the 30th Conference on Uncertainty in Artificial Intelligence (UAI 2014)*. [arXiv:1403.7265](#) [[stat.CO](#), [stat.ML](#)]
- 2014 Raja Affandi, Emily Fox, **Ryan P. Adams**, and Ben Taskar. Learning the Parameters of Determinantal Point Process Kernels. *Proceedings of the 31st International Conference on Machine Learning (ICML 2014)*. [arXiv:1402.4862](#) [[stat.ML](#)]
- 2014 Scott Linderman and **Ryan P. Adams**. Discovering Latent Network Structure in Point Process Data. *Proceedings of the 31st International Conference on Machine Learning (ICML 2014)*. [arXiv:1402.0914](#) [[stat.ML](#)]
- 2014 Jasper Snoek, Kevin Swersky, Richard S. Zemel and **Ryan P. Adams**. Input Warping for Bayesian Optimization of Non-stationary Functions. *Proceedings of the 31st International Conference on Machine Learning (ICML 2014)*. [arXiv:1402.0929](#) [[stat.ML](#)]
- 2014 Oren Rippel, Michael Gelbart and **Ryan P. Adams**. Learning Ordered Representations with Nested Dropout. *Proceedings of the 31st International Conference on Machine Learning (ICML 2014)*. [arXiv:1402.0915](#) [[stat.ML](#)]
- 2014 Andrew Miller, Luke Bornn, **Ryan P. Adams**, and Kirk Goldsberry. Factorized Point Process Intensities: A Spatial Analysis of Professional Basketball. *Proceedings of the 31st International Conference on Machine Learning (ICML 2014)*. [arXiv:1401.0942](#) [[stat.ML](#)]
- 2014 Xi Alice Gao, Andrew Mao, Yiling Chen and **Ryan P. Adams**. Trick or Treat: Putting Peer Prediction to the Test. *Proceedings of the 15th ACM Conference on Economics and Computation (EC 2014)*.
- 2014 David Duvenaud, Oren Rippel, **Ryan P. Adams** and Zoubin Ghahramani. Avoiding Pathologies in Very Deep Networks. *Proceedings of the 17th International Conference on Artificial Intelligence and Statistics (AISTATS 2014)*. [1402.5836](#) [[stat.ML](#)]
- 2014 Amos Waterland, Elaine Angelino, **Ryan P. Adams**, Jonathan Appavoo and Margo Seltzer. ASC: Automatically Scalable Computation. *Proceedings of the Nineteenth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS 2014)*.
- 2013 Nils Napp and **Ryan P. Adams**. Message Passing Inference with Chemical Reaction Networks. *Advances in Neural Information Processing Systems 26 (NIPS 2013)*.
- 2013 Jasper Snoek, **Ryan P. Adams** and Richard S. Zemel. A Determinantal Point Process Latent Variable Model for Inhibition in Neural Spiking Data. *Advances in Neural Information Processing Systems 26 (NIPS 2013)*.
- 2013 Jasper Snoek, Kevin Swersky and **Ryan P. Adams**. Multi-Task Bayesian Optimization. *Advances in Neural Information Processing Systems 26 (NIPS 2013)*.
- 2013 James Zou, Daniel Hsu, David Parkes and **Ryan P. Adams**. Contrastive Learning Using Spectral Methods. *Advances in Neural Information Processing Systems 26 (NIPS 2013)*.
- 2013 Amos Waterland, Elaine Angelino, Ekin D. Cubuk, Efthimios Kaxiras, **Ryan P. Adams**, Jonathan Appavoo and Margo Seltzer. Computational Caches. *Proceedings of the 6th International Systems and Storage Conference (SISTOR 2013)*.
- 2013 Shamim Nemati, Li-Wei Lehman and **Ryan P. Adams**. Learning Outcome-Discriminative Dynamics in Multivariate Physiological Cohort Time Series. *Proceedings of the 35th International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2013)*.
- 2013 Li-Wei Lehman, Shamim Nemati, **Ryan P. Adams**, George Moody, Atul Malhotra, and Roger G. Mark. Tracking Progression of Patient State of Health in Critical Care Using Inferred Shared Dynamics in Physiological Time Series. *Proceedings of the 35th International Conference of the IEEE Engineering in Medicine and Biology*

- Society (EMBC 2013).*
- 2013 Andrew Wilson and **Ryan P. Adams**. Gaussian Process Kernels for Pattern Discovery and Extrapolation. *Proceedings of the 30th International Conference on Machine Learning (ICML 2013)*. [arXiv:1302.4245](#) [[stat.ML](#)]
- 2013 Eyal Dechter, Jonathan Malmaud, **Ryan P. Adams** and Joshua Tenenbaum. Bootstrap Learning Via Modular Concept Discovery. *Proceedings of the 23rd International Joint Conference on Artificial Intelligence (IJCAI 2013)*.
- 2012 Jasper Snoek, Hugo Larochelle and **Ryan P. Adams**. Practical Bayesian Optimization of Machine Learning Algorithms. *Advances in Neural Information Processing Systems 25 (NIPS 2012)*. [arXiv:1206.2944](#) [[stat.ML](#)]
- 2012 James Zou and **Ryan P. Adams**. Priors for Diversity in Generative Latent Variable Models. *Advances in Neural Information Processing Systems 25 (NIPS 2012)*.
- 2012 Kevin Swersky, Daniel Tarlow, **Ryan P. Adams**, Richard S. Zemel and Brendan J. Frey. Probabilistic  $n$ -choose- $k$  Models for Classification and Ranking. *Advances in Neural Information Processing Systems 25 (NIPS 2012)*.
- 2012 Kevin Swersky, Daniel Tarlow, Ilya Sutskever, Ruslan Salakhutdinov, Richard S. Zemel and **Ryan P. Adams**. Cardinality Restricted Boltzmann Machines. *Advances in Neural Information Processing Systems 25 (NIPS 2012)*.
- 2012 Daniel Tarlow, Kevin Swersky, Richard S. Zemel, **Ryan P. Adams** and Brendan J. Frey. Fast Exact Inference for Recursive Cardinality Models. *Proceedings of the 28th Conference on Uncertainty in Artificial Intelligence (UAI 2012)*.
- 2012 Shamim Nemati, Li-Wei H. Lehman, **Ryan P. Adams** and Atul Malhotra. Discovering Shared Cardiovascular Dynamics Within a Patient Cohort. *Proceedings of the 34th International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2012)*.
- 2012 Li-Wei H. Lehman, Shamim Nemati, **Ryan P. Adams** and Roger G. Mark. Discovering Shared Dynamics in Physiological Signals: Application to Patient Monitoring in ICU. *Proceedings of the 34th International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2012)*.
- 2012 George E. Dahl, **Ryan P. Adams** and Hugo Larochelle. Training Restricted Boltzmann Machines on Word Observations. *Proceedings of the 29th International Conference on Machine Learning (ICML 2012)*. [arXiv:1202.5695](#) [[stat.ML](#)]
- 2012 Daniel Tarlow and **Ryan P. Adams**. Revisiting Uncertainty in Graph Cut Solutions. *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2012)*.
- 2012 Jeroen C. Chua, Inmar E. Givoni, **Ryan P. Adams** and Brendan J. Frey. Learning Hierarchical Patch Models that Factorize Shape and Colour. *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2012)*.
- 2012 Daniel Tarlow, **Ryan P. Adams** and Richard S. Zemel. Randomized Optimum Models for Structured Prediction. *Proceedings of the 15th International Conference on Artificial Intelligence and Statistics (AISTATS 2012)*.
- 2012 Jasper Snoek, **Ryan P. Adams** and Hugo Larochelle. On Nonparametric Guidance for Learning Autoencoder Representations. *Proceedings of the 15th International Conference on Artificial Intelligence and Statistics (AISTATS 2012)*. [arXiv:1106.1925](#) [[stat.ML](#)]
- 2010 **Ryan P. Adams**, Zoubin Ghahramani and Michael I. Jordan. Tree-Structured Stick Breaking for Hierarchical Data. *Advances in Neural Information Processing Systems 23 (NIPS 2010)*. [arXiv:1006.1062](#) [[stat.ME](#)]
- 2010 Iain Murray and **Ryan P. Adams**. Slice Sampling Covariance Hyperparameters of Latent Gaussian Models. *Advances in Neural Information Processing Systems 23 (NIPS 2010)*. [arXiv:1006.0868](#) [[stat.CO](#)]
- 2010 **Ryan P. Adams**, George E. Dahl and Iain Murray. Incorporating Side Information into Probabilistic Ma-

trix Factorization with Gaussian Processes. *Proceedings of the 26th Conference on Uncertainty in Artificial Intelligence (UAI 2010)*. [arXiv:1003.4944 \[stat.ML\]](#)

2010 **Ryan P. Adams**, Hanna M. Wallach and Zoubin Ghahramani. Learning the Structure of Deep Sparse Graphical Models. *Proceedings of the 13th International Conference on Artificial Intelligence and Statistics (AISTATS 2010)*. [arXiv:1001.0160 \[stat.ML\]](#) **Winner of Best Paper Award**

2010 Iain Murray, **Ryan P. Adams** and David J.C. MacKay. Elliptical Slice Sampling. *Proceedings of the 13th International Conference on Artificial Intelligence and Statistics (AISTATS 2010)*. [arXiv:1001.0175 \[stat.CO\]](#)

2009 **Ryan P. Adams** and Zoubin Ghahramani. Archipelago: Nonparametric Bayesian Semi-Supervised Learning. *Proceedings of the 26th International Conference on Machine Learning (ICML 2009)*. **Honorable Mention for Best Paper Award**

2009 **Ryan P. Adams**, Iain Murray and David J.C. MacKay. Tractable Nonparametric Bayesian Inference in Poisson Processes with Gaussian Process Intensities. *Proceedings of the 26th International Conference on Machine Learning (ICML 2009)*. **Honorable Mention for Best Student Paper Award**

2009 **Ryan P. Adams**, Iain Murray and David J.C. MacKay. The Gaussian Process Density Sampler. *Advances in Neural Information Processing Systems 22 (NIPS 2008)*.

2008 **Ryan P. Adams** and Oliver Stegle. Gaussian Process Product Models for Nonparametric Nonstationarity. *Proceedings of the 25th International Conference on Machine Learning (ICML 2008)*.

#### Invited Discussions

2011 Iain Murray and **Ryan P. Adams**. Discussion of “Riemann manifold Langevin and Hamiltonian Monte Carlo methods” by Mark Girolami and Ben Calderhead. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 73(2):123-214.

#### Technical Reports

2013 Dan Lovell, Jonathan Malmaud, **Ryan P. Adams**, and Vikash K. Mansinghka. ClusterCluster: Parallel Markov Chain Monte Carlo for Dirichlet Process Mixtures. [arXiv:1304.2302 \[stat.ML\]](#)

2013 Oren Rippel and **Ryan P. Adams**. High-Dimensional Probability Estimation with Deep Density Models. [arXiv:1302.5125 \[stat.ML\]](#)

2011 **Ryan P. Adams** and Richard S. Zemel. Ranking via Sinkhorn Propagation. [arXiv:1106.1922 \[stat.ML\]](#)

2010 **Ryan P. Adams**, Iain Murray and David J.C. MacKay. Nonparametric Bayesian Density Modeling with Gaussian Processes. [arXiv:0912.4896 \[stat.CO\]](#)

2007 **Ryan P. Adams** and David J.C. MacKay. Bayesian Online Changepoint Detection. [arXiv:0710.3742 \[stat.ML\]](#)