

Vitae

MICHAEL I. JORDAN

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EDUCATION

PhD in Cognitive Science, 1985
University of California, San Diego.

MS in Mathematics (Statistics), 1980
Arizona State University.

BS *magna cum laude* in Psychology, 1978
Louisiana State University.

PROFESSIONAL EXPERIENCE

Professor – Department of Electrical Engineering and Computer Sciences, Department of Statistics,
University of California, Berkeley, 1998 – present.

Professor – Department of Industrial Engineering and Operations Research, University of California,
Berkeley, 2017 – present.

Honorary Professor – Peking University, 2018 – present.

Honorary Professor – Tsinghua University, 2019 – present.

Honorary Doctorate of Engineering and Technology – Yale University, 2020.

Chair – Department of Statistics, University of California, Berkeley, 2015-2017.

Distinguished Visiting Professor – Tsinghua University, 2017 – 2019.

Chaire d'Excellence – Fondation Sciences Mathématiques de Paris, 2012.

Professor – Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, 1997
– 1998.

Associate professor with tenure – Department of Brain and Cognitive Sciences, Massachusetts Institute
of Technology, 1994 – 1997.

Associate professor – Department of Brain and Cognitive Sciences, Massachusetts Institute of Tech-
nology, 1992 – 1994.

Assistant professor – Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, 1988 – 1992.

Postdoctoral researcher – Department of Computer and Information Science, University of Massachusetts, Amherst, 1986 – 1988.

RESEARCH INTERESTS

Statistical Machine Learning, Variational Inference, Optimization Theory, Control Theory, Bayesian Nonparametric Statistics, Distributed Statistical Inference, Graphical Models, Computational Biology, Statistical Genetics, Human Motor Control, Speech Production and Cognitive Modeling

HONORS

Foreign Member of the Royal Society, 2021.

Ulf Grenander Prize in Stochastic Theory and Modeling, American Mathematical Society, 2021.

Vannevar Bush Faculty Fellowship, 2021-2026.

Honorary Doctorate of Engineering and Technology, Yale University, 2020.

John von Neumann Medal, IEEE, 2020.

World's Most Innovative People Award, World Summit on Innovation and Entrepreneurship, 2019.

Plenary Speaker, International Congress of Mathematicians, 2018.

Miller Research Professorship, University of California, Berkeley, 2017-2018.

IJCAI Award for Research Excellence, 2016.

David E. Rumelhart Prize, 2015.

Fellow, International Society for Bayesian Analysis (ISBA), 2014.

Fellow, Society for Industrial and Applied Mathematics (SIAM), 2012.

Elected Member, International Statistical Institute (ISI), 2012.

Member, American Academy of Arts and Sciences (AAAS), 2011.

Member, National Academy of Sciences (NAS), 2010.

Member, National Academy of Engineering (NAE), 2010.

Fellow, Association for Computing Machinery (ACM), 2010.

Fellow, Cognitive Science Society (CSS), 2010.

ACM/AAAI Allen Newell Award, 2009.

Honorary Professor of Hebei University, China, 2009.

SIAM Activity Group on Optimization Prize, 2008.

Miller Research Professorship, University of California, Berkeley, 2008.

Fellow, American Statistical Association (ASA), 2007.

Fellow, American Association for the Advancement of Science (AAAS), 2006.

IEEE Neural Networks Pioneer Award, 2006.

Pehong Chen Distinguished Professorship, University of California, 2006.

Diane S. McEntyre Award for Excellence in Teaching, 2006.

Fellow, Institute of Mathematical Statistics (IMS), 2005.

Fellow, Institute of Electrical and Electronics Engineers (IEEE), 2005.

Fellow, American Association for Artificial Intelligence (AAAI), 2002.

MIT Class of 1947 Career Development Award, 1992 – 1995.

NSF Presidential Young Investigator Award, 1991 – 1996.

NAMED LECTURES

Indira Foundation Lecture, Indian Institute of Technology Bombay, 2019.

Fields Institute Distinguished Lecture in Statistical Sciences, Toronto, 2019.

J. Mark Sowers Distinguished Lecture, Virginia Tech, 2019.

Warren Center Distinguished Lecture, University of Pennsylvania, 2019.

Taskar Lecture, University of Washington, 2018.

Milne Lecture, Oregon State University, 2017.

Challis Lecture, University of Florida, 2017.

Wilks Memorial Lecture, Princeton University, 2016.

Jon Postel Lecture, University of California, Los Angeles, 2016.

Gene Brice Colloquium, Rice University, 2016.

John von Neumann Lecture, Brown University, 2015.

Coxeter Lecture Series, Fields Institute for Research in Mathematical Sciences, 2015.

Bahadur Memorial Lecture, University of Chicago, 2015.

Harry Nyquist Distinguished Lecture, Yale University, 2013.

Vincent Meyer Colloquium, Israel Institute of Technology, 2012.

Constance van Eeden Colloquium, University of British Columbia, 2012.

Neyman Lecture, Institute of Mathematical Statistics, 2011.

Ernst Ising Lecture, Brown University, 2011.

Dertouzos Lecture, Massachusetts Institute of Technology, 2011.

George A. Bekey Lecture, University of Southern California, 2011.

Thomas E. Noonan Lecture, Georgia Institute of Technology, 2011.

R. L. Anderson Lecture, University of Kentucky, 2011.

S. James Press Endowed Lecture, University of California, Riverside, 2010.

Posner Lecture, Neural Information Processing Systems Annual Conference, 2010.

Morris H. DeGroot Memorial Lecture, Carnegie Mellon University, 2009.

Pao-Lu Hsu Lecture, Beijing University, 2009.

Institute Medallion Lecturer, Institute of Mathematical Statistics, 2004.

Paul Rockwood Memorial Lecture, Institute for Neural Computation, 1996.

BEST PAPER AWARDS

Best Paper Award Honorable Mention (with Romain Lopez and Inderjit Dhillon), for “Learning From extreme bandit feedback” in AAAI 2021. (with A. Ganapathi, H. Kuno, U. Dayal, J. Wiener,

Ten-Year Influential Paper (with A. Ganapathi, H. Kuno, U. Dayal, J. Wiener, A. Fox, and D. Patterson). IEEE International Conference on Data Engineering (ICDE), 2019.

Notable Paper Award (with Ryan Giordano, William Stephenson, Runjing Liu and Tamara Broderick), Artificial Intelligence and Statistics (AISTATS), 2019.

Best Paper Award (with Chi Jin, Zeyuan Allen-Zhu and Sebastien Bubeck), ICML Workshop on Exploration in Reinforcement Learning, 2018.

Most Read Paper in the journal *Optimization Methods and Software* (with Chenxin Ma, et al.), 2017.

SIGIR Test of Time Honorable Mention (with D. Blei, for “Modeling annotated data” in SIGIR 2003), 2015.

ICML Test of Time Award (with F. Bach and G. Lanckriet), for “Multiple kernel learning, conic duality, and the SMO algorithm” in ICML 2004), 2014.

Best Student Paper Award (with P. Wang, K. Laskey and C. Domeniconi), SIAM International Conference on Data Mining (SDM), 2011.

Best Student Paper Award (with J. Duchi and L. Mackey), International Conference on Machine Learning (ICML), 2010.

Best Student Paper Award (with P. Liang), International Conference on Machine Learning (ICML), 2008.

IEEE Signal Processing Society Young Author Award (with X. Nguyen and M. Wainwright), 2007.

Best Student Paper Award (with P. Flaherty and A. Arkin), Neural Information Processing Systems (NIPS), 2005.

Best Paper Award (with X. Nguyen and M. Wainwright), International Conference on Machine Learning (ICML), 2004.

Best Paper Award honorable mention (with F. Bach and G. Lanckriet), International Conference on Machine Learning (ICML), 2004.

Best Student Paper Award (with D. Blei, T. Griffiths and J. Tenenbaum), Neural Information Processing Systems (NIPS), 2003.

Best Paper Award nominee (with B. Sinopoli, M. Franceschetti, L. Schenato, K. Poolla, and S. Sastry), 42nd IEEE Conference on Decision and Control (CDC), 2003.

Best Student Paper Award runner-up (with E. Xing and S. Russell), Uncertainty in Artificial Intelligence (UAI), 2003.

Best Student Paper Award (with T. Jaakkola), Uncertainty in Artificial Intelligence Conference (UAI), 1996.

Best Paper Award (with R. Jacobs), American Control Conference (ACC), 1991.

EDITORIAL BOARDS

Statistical Science (Associate Editor, 2020-)

SIAM Journal on the Mathematics of Data Science (Founding Section Editor, 2018-2020)

Foundations and Trends in Machine Learning (Editor-in-Chief, 2007-)

Bayesian Analysis (Editor, 2006-2011)

Stochastic Analysis and Applications (Honorary Editorial Board, 2010-)

Information and Inference (Associate Editor, 2011-)

Knowledge and Information Systems (Honorary Editor-in-Chief, 2016-)

IEEE Signal Processing Magazine (Editorial Board, 2010-2014)

Statistics and Computing (Advisory Board, 2013-)

Foundations and Trends in Optimization (Editorial Board, 2013-)

IEEE Signal Processing Magazine (Guest Editor, Special Issue on Graphical Models, 2010)

Journal of the American Statistical Association (Associate Editor, 1998-2001)

Journal of Machine Learning Research (Action Editor, 2000-2009)

Neural Computation (Associate Editor, 1989-2014)

Statistical Analysis and Data Mining (Associate Editor, 2006-2009)

Machine Learning (Action Editor, 1993-1999)

Journal of Artificial Intelligence Research (Editorial Board, 1998-2001)

International Journal of Machine Learning and Cybernetics (Advisory Board, 2010-)

Cognition (Editorial Board, 1992-1998)

International Journal of Neural Systems (Editorial Advisory Board, 2002-2010)

Neural Networks (Editorial Board, 1994-2008)

Neurocomputing (Editorial Board, 1994-2003)

Neural Processing Letters (Editorial Board, 1994-2007)

OTHER PROFESSIONAL ACTIVITIES

President, International Society for Bayesian Analysis (ISBA), 2010-2011

ACM Turing Award Committee, 2011-2014

Membership Committee, American Academy of Arts and Sciences (AAAS), 2011-2017

IMS Committee on Special Lectures, 2011-2014

Series Editor, Springer-Verlag Series on Statistics and Information Sciences

Series Editor, MIT Press Series on Adaptive Computation and Machine Learning

Executive Committee, International Society for Bayesian Analysis (ISBA), 2009-2012

Prize Committee, International Society for Bayesian Analysis (ISBA), 2009-2010

Advisory Board, Bayesian Analysis (Journal of the International Society for Bayesian Analysis)

Scientific Advisory Board, ARC Centre of Excellence for Mathematical and Statistical Frontiers of Big Data, Big Models, New Insights, 2014-

Scientific Advisory Board, Institute of Mathematical Statistics, Tokyo, Japan, 2008-

External Advisory Board, Statistics and Operational Research Doctoral Training Centre, Lancaster University, 2010-

Founding Board Member of the International Machine Learning Society (IMLS), 2001-2009

Member of the Neural Information Processing Systems (NIPS) Foundation Board, 1998-

Session Organizer, IMS Annual Meeting, 2010

Chair, MIT Press Editorial Advisory Board, 1994-1998

Advisory Council for the International Association for the Study of Attention and Performance, 1994-2002

Program Chair, NIPS (Neural Information Processing Systems Conference), 1996

General Chair, NIPS (Neural Information Processing Systems Conference), 1997

Advisory Editor, MIT Encyclopedia of the Cognitive Sciences

Director – NATO ASI Summer School on Learning in Graphical Models, Erice, Italy, September, 1996

GRADUATE AND POSTDOCTORAL SUPERVISION

Graduate Student Supervision

Eric Loeb, 1989–1995; Zoubin Ghahramani, 1990–1995; John Houde, 1990–1997; Wey Fun, 1991–1995; Philip Sabes, 1991–1996; Tommi Jaakkola, 1992–1997; Emanuel Todorov, 1992–1998; Marina Meila, 1992–1999; Andrew Ng, 1997–2003; David Blei, 1999–2004; Alice Zheng, 1999–2005; Eric Xing, 2000–2004; Jon McAuliffe, 2000–2005; Francis Bach, 2000–2005; Gert Lanckriet, 2000–2005; Brian Vogel, 2001–2005; Patrick Flaherty, 2001–2007; XuanLong Nguyen, 2001–2007; Barbara Engelhardt, 2001–2007; Romain Thibaux, 2003–2008; Simon Lacoste-Julien, 2003–2009; Guillaume Obozinski, 2003–2009; Sarah Moussa, 2003–2005; Ben Blum, 2004–2008; Alex Simma, 2004–2010; Peter Bodik, 2004–2010; Junming Yin, 2005–2010; Alexandre Bouchard-Côté, 2005–2010; Sriram Sankararaman, 2005–2010; Percy Liang, 2005–2011; Chris Hundt, 2006–2008; Alex Shyr, 2006–2011; Kurt Miller, 2006–2011; Daniel Ting, 2006–2011; Ariel Kleiner, 2006–2012; Fabian Wauthier, 2006–2013; Lester Mackey, 2007–2012; John Duchi, 2008–2014; Tamara Broderick, 2009–2014; Teodor Moldovan, 2009–2014; Andre Wibisono, 2010–2016; Yuchen Zhang, 2011–2016; Ashia Wilson, 2012–2018; Virginia Smith, 2012–2017; Xinghao Pan, 2012–2017; Nicholas Boyd, 2012–2018; Ahmed El Alaoui, 2013–2018; Robert Nishihara, 2013–2019; Philipp Moritz, 2013–2019; Chi Jin, 2013–2019; Ryan Giordano, 2014–2019; Max Rabinovich, 2014–2019; Xiang Cheng, 2014–2020; Horia Mania, 2014–2020; Lihua Lei, 2015–2019; Jianbo Chen, 2015–2019; Chelsea Zhang, 2015–2020; Max Simchowitz, 2015–2021; Mitchell Stern, 2015–2020; Nilesch Tripuraneni, 2016–; Koulik Khamaru 2016–; Eric Mazumdar, 2016–2021; Esther Rolf, 2016–; Aldo Pacchiano, 2016–2021; Romain Lopez, 2016–2021; Chiao-Yu Yang, 2016–2021; Lydia Liu, 2017–; Karl Krauth, 2017–; Melih Elibol, 2017–; Tijana Zrnic, 2017–; Jake Soloff, 2017–; Serena Wang, 2018–; Akosua Busia, 2018–; Wenshuo Guo, 2018–; Tianyi Lin, 2018–; Clara Wong-Fillnjiang, 2018–; Anastasios Angelopoulos, 2019–; Neha Wadia, 2019–; Banghua Zhu, 2019–; Reese Pathak, 2019–; Mariel Werner, 2019–; Meena Jagadeesan, 2020–; Alex Wei, 2020–

Postdoctoral Supervision

Robert Jacobs, 1990–1992; Marios Mantakas, 1990–1991; Yoshua Bengio, 1991–1992; Lei Xu, 1992–1993; David Cohn, 1992–1995; Daniel Wolpert, 1992–1995; Satinder Singh, 1993–1995; Lawrence Saul, 1994–1996; Thomas Hofmann, 1997–1999; Yair Weiss, 1998–2001; Chiranjib Bhattacharyya, 2000–2002; Sekhar Tatikonda, 2000–2002; Michal Rosen-Zvi, 2002–2003;

Martin Wainwright, 2002–2004; Yee-Whye Teh, 2003–2005; Matthias Seeger, 2003–2005; Ben Taskar, 2004–2006; Fei Sha, 2006–2007; Zhihua Zhang, 2006–2008; Erik Sudderth, 2006–2009; Gad Kimmel, 2006–2008; Charles Sutton, 2007–2009; Emily Fox, 2010–2011; Justin Ma, 2010–2012; Ameet Talwalkar, 2010–2014; Purnamrita Sarkar, 2010–2014; John Paisley, 2011–2013; Jennifer Tom, 2011–2013; Venkat Chandrasekaran, 2011–2012; Stefanie Jegelka, 2012–2014; Joseph Gonzalez, 2012–2015; Xi Chen, 2013–2014; Elaine Angelino, 2014–2017; Yun Yang, 2014–2016; Jason Lee, 2015–2016; Aaditya Ramdas, 2015–2018; Jeff Regier, 2016–2019; Sarah Brown, 2017–2018; Nicolas Flammarion, 2017–2019; Nhat Ho, 2017–2020; Yi-An Ma, 2017–2019; Michael Muehlebach, 2018–2020; Jelena Diakonikolas, 2018–2019; Elynn Chen, 2019–2021; Junchi Li, 2019–; Feng Ruan, 2019–; Bin Shi, 2019–2021; Adam Sealfon, 2019–; Karthevasan Kandasamy, 2019–; Guilherme França, 2020–; Yixin Wang, 2020–2021; Nikhil Garg, 2020–2021; Manolis Zampetakis, 2020–; Stephen Bates, 2020–; Ellen Vitercik, 2021–

JOURNAL ARTICLES

- França, G., Jordan, M. I., & Vidal, R. (2021). On dissipative symplectic integration with applications to gradient-based optimization. *Journal of Statistical Mechanics: Theory and Experiment*, 2021, 043402.
- Muehlebach, M., & Jordan, M. I. (2021). Optimization with momentum: Dynamical, control-theoretic, and symplectic perspectives. *Journal of Machine Learning Research*, 22, 1-50.
- Gabitto, M., Marie-Nelly, H., Pakman, A., Pataki, A., Darzacq, X., & Jordan, M. I. (to appear). A Bayesian nonparametric approach to super-resolution single-molecule localization. *Annals of Applied Statistics*.
- Wilson, A., Recht, B., & Jordan, M. I. (to appear). A Lyapunov analysis of accelerated methods in optimization. *Journal of Machine Learning Research*.
- Khamaru, K., Pananjady, A., Ruan, F., Wainwright, M., & Jordan, M. I. (to appear). Is temporal difference learning optimal? An instance-dependent analysis. *SIAM Journal on Mathematics of Data Science*.
- Diakonikolas, J., & Jordan, M. I. (to appear). Generalized momentum-based methods: A Hamiltonian perspective. *SIAM Journal on Optimization*.
- Jin, C., Netrapalli, P., Ge, R., Kakade, S., & Jordan, M. I. (2021). On nonconvex optimization for machine learning: Gradients, stochasticity, and saddle points. *Journal of the ACM*, 68, doi.org/10.1145/3418526.
- Zrnic, T., Ramdas, A., & Jordan, M. I. (2021). Asynchronous online testing of multiple hypotheses. *Journal of Machine Learning Research*, 22, 1-39.
- Lopez, R., Mehlman, J., Regier, J., Jordan, M. I., & Yosef, N. (2021). Probabilistic harmonization and annotation of single-cell transcriptomics data with deep generative models. *Molecular Systems Biology*, 17, e9620.
- Mou, W., Ma, Y.-A., Wainwright, M., Bartlett, P., & Jordan, M. I. (2021). High-order Langevin diffusion yields an accelerated MCMC algorithm. *Journal of Machine Learning Research*, 22, 1-43.

- Angelopoulos, A., Pathak, R., Varma, R., & Jordan, M. I. (2020). On identifying and mitigating bias in the estimation of the COVID-19 case fatality rate. *Harvard Data Science Review*, <https://doi.org/10.1162/99608f92>.
- El Alaoui, A., Krzakala, F., & Jordan, M. I. (2020). Fundamental limits of detection in the spiked Wigner model. *Annals of Statistics*, *48*, 863-885.
- Rabinovich, M., Ramdas, A., Wainwright, M., & Jordan, M. I. (2020). Optimal rates and tradeoffs in multiple testing. *Statistica Sinica*, *30*, 741-762.
- Yang, P., Chen, J., Hsieh, C.-J., Wang, J.-L., & Jordan, M. I. (2020). Greedy Attack and Gumbel Attack: Generating adversarial examples for discrete data. *Journal of Machine Learning Research*, *21*, 1-36.
- Rabinovich, M., Ramdas, A., Jordan, M. I., & Wainwright, M. (2020). Function-specific mixing times and concentration away from equilibrium. *Bayesian Analysis*, *15*, 505-532.
- Dwivedi, R., Ho, N., Khamaru, K., Wainwright, M., Jordan, M. I., & Yu, B. (2020). Singularity, misspecification, and convergence rate of the EM algorithm. *Annals of Statistics*, *48*, 3161-3182.
- Ma, Y.-A., Chen, Y., Jin, C., Flammarion, N., & Jordan, M. I. (2019). Sampling can be faster than optimization. *Proceedings of the National Academy of Sciences*, <https://doi.org/10.1073/pnas.1820003116>.
- Jordan, M. I. (2019). Artificial intelligence: The revolution hasn't happened yet. *Harvard Data Science Review*, *1*, [10.1162/99608f92.f06c6e61](https://doi.org/10.1162/99608f92.f06c6e61).
- Lee, J., Panageas, I., Piliouras, G., Simchowitz, M., Jordan, M. I., & Recht, B. (2019). First-order methods almost always avoid strict saddle-points. *Mathematical Programming, Series B*, doi.org/10.1007/s10107-019-01374-3.
- Ramdas, A., Barber, R., Wainwright, M., & Jordan, M. I. (2019). A unified treatment of multiple testing with prior knowledge using the p-filter. *Annals of Statistics*, *47*, 2790-2821.
- El Alaoui, A., A. Ramdas, Krzakala, F., Zdeborova, L., & Jordan, M. I. (2019). Decoding from pooled data: Sharp information-theoretic bounds. *SIAM Journal on Mathematics of Data Science*, *1*, 161-188.
- Ramdas, A., Chen, J., Wainwright, M., & Jordan, M. I. (2019). A sequential algorithm for false discovery rate control on directed acyclic graphs. *Biometrika*, *106*, 69-86.
- Long, M., Cao, Y., Cao, Z., Wang, J., & Jordan, M. I. (2019). Transferable representation learning with deep adaptation networks. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, *41*, 3071-3085.
- El Alaoui, A., Ramdas, A., Krzakala, F., Zdeborova, L., & Jordan, M. I. (2019). Decoding from pooled data: Phase transitions of message passing. *IEEE Transactions on Information Theory*, *65*, 572-585.
- Lopez, R., Regier, J., Cole, M., Jordan, M. I., & Yosef, N. (2018). Bayesian inference for a generative model of transcriptome profiles from single-cell RNA sequencing. *Nature Methods*, *15*, 1053-1058.

- Giordano, R., Broderick, T., & Jordan, M. I. (2018). Covariances, robustness, and variational Bayes. *Journal of Machine Learning Research*, 19, 1-49.
- Jordan, M. I., Lee, J., & Yang, Y. (2018). Communication-efficient statistical inference. *Journal of the American Statistical Association*, 114, 668-681.
- Smith, V., Forte, S., Ma, C., Takac, M., Jordan, M. I., and Jaggi, M. (2018). CoCoA: A general framework for communication-efficient distributed optimization. *Journal of Machine Learning Research*, 18, 1-49.
- Jordan, M. I. (2018). Dynamical, symplectic and stochastic perspectives on gradient-based optimization. *Proceedings of the International Congress of Mathematicians*, 1, 551-558.
- Boyd, N., Hastie, T., Boyd, S., Recht, B., & Jordan, M. I. (2018). Saturating splines and feature selection. *Journal of Machine Learning Research*, 18, 1-32.
- Broderick, T., Wilson, A., & Jordan, M. I. (2018). Posteriors, conjugacy, and exponential families for completely random measures. *Bernoulli*, 24, 3181-3221.
- Mania, H., Ramdas, A., Wainwright, M., Jordan, M. I., & Recht, B. (2018). On kernel methods for covariates that are rankings. *Electronic Journal of Statistics*, 12, 2537-2577.
- Ghanta, S., Dy, J., Niu, D., & Jordan, M. I. (2018). Latent marked Poisson process with applications to object segmentation. *Bayesian Analysis*, 13, 85-113.
- Mania, H., Pan, X., Papailiopoulos, D., Recht, B., Ramchandran, K., & Jordan, M. I. (2017). Perturbed iterate analysis for asynchronous stochastic optimization. *SIAM Journal on Optimization*, 27, 2202-2229.
- Duchi, J., Jordan, M. I. & Wainwright, M. (2017). Minimax optimal procedures for locally private estimation. *Journal of the American Statistical Association*, 113, 182-201.
- Ma, C., Konečný, J., Jaggi, M., Smith, V., Jordan, M. I., Richtárik, P. & Takáč, M. (2017). Distributed optimization with arbitrary local solvers. *Optimization Methods and Software*, 4, 813-848.
- Ghanta, S., Jordan, M. I., Kose, K., Brooks, D., Rajadhyaksha, M., & Dy, J. (2017). A marked Poisson process driven latent shape model for 3D segmentation of reflectance confocal microscopy image stacks of human skin. *IEEE Transactions on Image Processing*, 26, 172-184.
- Zhang, Y., Wainwright, M., & Jordan, M. I. (2017). Optimal prediction for sparse linear models? Lower bounds for coordinate-separable M-estimators. *Electronic Journal of Statistics*, 11, 752-799.
- Wibisono, A., Wilson, A., & Jordan, M. I. (2016). A variational perspective on accelerated methods in optimization. *Proceedings of the National Academy of Sciences*, 133, E7351-E7358.
- Yang, Y., Wainwright, M. & Jordan, M. I. (2016). On the computational complexity of high-dimensional Bayesian variable selection. *Annals of Statistics*, 44, 2497-2532.
- Fang, E., Li, M-D., Jordan, M. I., & Liu, H. (2016). Mining massive amounts of genomic data: A semiparametric topic modeling approach. *Journal of the American Statistical Association*, 10.1080/01621459.2016.1256812.

- Zhang, Y., Chen, X., Jordan, M. I., & Zhou, D. (2016). Spectral methods meet EM: A provably optimal algorithm for crowdsourcing. *Journal of Machine Learning Research*, 102, 1-44.
- Jordan, M. I. & Mitchell, T. (2015). Machine learning: Trends, perspectives and prospects. *Science*, 349, 255-260.
- Duchi, J., Jordan, M. I., Wainwright, M., & Wibisono, A. (2015). Optimal rates for zero-order optimization: the power of two function evaluations. *IEEE Transactions on Information Theory*, 61, 2788-2806.
- Talwalkar, A. Mackey, L., & Jordan, M. I. (2015). Distributed matrix completion and robust factorization. *Journal of Machine Learning Research*, 16, 913-960.
- Paisley, J., Wang, C., Blei, D., & Jordan, M. I. (2015). Nested hierarchical Dirichlet processes. *Transactions on Pattern Analysis and Machine Intelligence*, 37, 256-270.
- Broderick, T., Mackey, L., Paisley, J., & Jordan, M. I. (2015). Combinatorial clustering and the beta negative binomial process. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 37, 290-306.
- Mackey, L., Jordan, M. I., Chen, R. Y., Farrell, B. & Tropp, J. A. (2014). Matrix concentration inequalities via the method of exchangeable pairs. *Annals of Probability*, 42, 906-945.
- Kleiner, A., Talwalkar, A., Sarkar, P., & Jordan, M. I. (2014). A scalable bootstrap for massive data. *Journal of the Royal Statistical Society, Series B*, 76, 795-816.
- Fox, E. B., Hughes, M., Sudderth, E., & Jordan, M. I. (2014). Joint modeling of multiple time series via the beta process with application to motion capture segmentation. *Annals of Applied Statistics*, 8, 1281-1313.
- Sarkar, P., Chakrabarti, D. & Jordan, M. I. (2014). Nonparametric link prediction in large scale dynamic networks. *Electronic Journal of Statistics*, 8, 2022-2065.
- Duchi, J., Jordan, M. I. & Wainwright, M. (2014). Privacy aware learning. *Journal of the ACM*, 61, 1-57.
- Lindsten, F., Jordan, M. I., & Schön, T. (2014). Particle Gibbs with ancestor sampling. *Journal of Machine Learning Research*, 15, 2145-2184.
- Talwalkar, A, Liptrap, J., Newcomb, J., Hartl, C., Terhorst, J., Curtis, K., Bresler, M., Song, Y., Jordan, M. I., & D. Patterson. (2014). SMASH: A benchmarking toolkit for variant calling. *Bioinformatics*, DOI:10.1093/bioinformatics/btu345.
- Niu, D., Dy, J., & Jordan, M. I. (2014). Iterative discovery of multiple alternative clustering views. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 36, 1340-1353.
- Zhang, Z., Wang, S., Liu, D., & Jordan, M. I. (2014). Matrix-variate Dirichlet process priors with applications. *Bayesian Analysis*, 9, 259-286.
- Jordan, M. I. (2013). On statistics, computation and scalability. *Bernoulli*, 19, 1378-1390.

- Bouchard-Côté, A. & Jordan, M. I. (2013). Evolutionary inference via the Poisson indel process. *Proceedings of the National Academy of Sciences*, 110, 1160-1166.
- Chandrasekaran, V. & Jordan, M. I. (2013). Computational and statistical tradeoffs via convex relaxation. *Proceedings of the National Academy of Sciences*, 110, E1181-E1190.
- Broderick, T., Jordan, M. I., & Pitman, J. (2013). Cluster and feature modeling from combinatorial stochastic processes. *Statistical Science*, 28, 289-312.
- Liang, P., Jordan, M. I., & Klein, D. (2013). Learning dependency-based compositional semantics. *Computational Linguistics*, 39, 389-446.
- Duchi, J., Mackey, L., & Jordan, M. I. (2013). The asymptotics of ranking algorithms. *Annals of Statistics*, 41, 2292-2323.
- Broderick, T., Pitman, J., & Jordan, M. I. (2013). Feature allocations, probability functions, and paint-boxes. *Bayesian Analysis*, 8, 801-836.
- Lindsten, F., Jordan, M. I., & Schön, T. (2013). Bayesian semiparametric Wiener system identification. *Automatica*, 49, 2053-2063.
- Yan, D., Huang, L., & Jordan, M. I. (2013). Cluster forests. *Computational Statistics and Data Analysis*, 66, 178-192.
- Muratore, K., Engelhardt, B., Srouji, J., Jordan, M. I., Brenner, S., & Kirsch, J. (2013). Molecular function prediction for a family exhibiting evolutionary tendencies towards substrate specificity swapping: Recurrence of tyrosine aminotransferase activity in the I α subfamily. *Proteins: Structure, Function, and Bioinformatics*, DOI:10.1002/prot.24318.
- Duchi, J., Agarwal, A., Johansson, M., & Jordan, M. I. (2012). Ergodic mirror descent. *SIAM Journal on Optimization*, 22, 1549-1578.
- Bouchard-Côté, A., Sankararaman, S., & Jordan, M. I. (2012). Phylogenetic inference via sequential Monte Carlo. *Systematic Biology*, 61, 579-593, 2012.
- Zhang, Z., Wang, S., Liu, D., & Jordan, M. I. (2012). EP-GIG priors and applications in Bayesian sparse learning. *Journal of Machine Learning Research*, 13, 2031-2061.
- Broderick, T., Jordan, M. I., & Pitman, J. (2012). Beta processes, stick-breaking, and power laws. *Bayesian Analysis*, 7, 439-476.
- Zhang, Z., Liu, D., Dai, G., & Jordan, M. I. (2012). Coherence functions with applications in large-margin classification methods. *Journal of Machine Learning Research*, 13, 2705-2734.
- Obozinski, G., Wainwright, M. & Jordan, M. I. (2011). Support union recovery in high-dimensional multivariate regression. *Annals of Statistics*, 39, 1-47.
- Fox, E. B., Sudderth, E., Jordan, M. I., & Willsky, A. S. (2011). A sticky HDP-HMM with application to speaker diarization. *Annals of Applied Statistics*, 5, 1020-1056.
- Engelhardt, B., Jordan, M. I., Srouji, J., & Brenner, S. (2011). Genome-scale phylogenetic function annotation of large and diverse protein families. *Genome Research*, 21, 1969-1980.

- Sutton, C. A. & Jordan, M. I. (2011). Bayesian inference for queueing networks and modeling of Internet services. *Annals of Applied Statistics*, 5, 254-282.
- Fox, E. B., Sudderth, E., Jordan, M. I., & Willsky, A. S. (2011). Bayesian nonparametric inference of switching dynamic linear models. *IEEE Transactions on Signal Processing*, 59, 1569-1585.
- Wauthier, F., Jordan, M. I., & Jojic, N. (2011). Nonparametric combinatorial sequence models. *Journal of Computational Biology*, 18, 1649-1660.
- Carin, L., Baraniuk, R. G., Cevher, V., Dunson, D., Jordan, M. I., Sapiro, G., & Wakin, M. B. (2011). Learning low-dimensional signal models. *IEEE Signal Processing Magazine*, 28, 39-51.
- Zhang, Z., Dai, G., & Jordan, M. I. (2011). Bayesian generalized kernel mixed models. *Journal of Machine Learning Research*, 12, 111-139.
- Blei, D., Griffiths, T., & Jordan, M. I. (2010). The nested Chinese restaurant process and Bayesian inference of topic hierarchies. *Journal of the ACM*, 57, 1-30.
- Blum, B., Jordan, M. I., & Baker, D. (2010). Feature space resampling for protein conformational search. *Proteins: Structure, Function, and Bioinformatics*, 78, 1583-1593.
- Nguyen, X., Wainwright, M., & Jordan, M. I. (2010). Estimating divergence functionals and the likelihood ratio by convex risk minimization. *IEEE Transactions on Information Theory*, 56, 5847-5861.
- Ting, D., Wang, G., Shapovalov, M., Mitra, R., Jordan, M. I., & Dunbrack, R. (2010). Neighbor-dependent Ramachandran probability distributions of amino acids developed from a hierarchical Dirichlet process model. *PLoS Computational Biology*, 6, e1000763.
- Sankararaman, S., Sha, F., Kirsch, J., Jordan, M. I., & Sjolander, K. (2010). Active site prediction using evolutionary and structural information. *Bioinformatics*, 26, 617-624.
- Obozinski, G., Taskar, B. & Jordan, M. I. (2010). Joint covariate selection and joint subspace selection for multiple classification problems. *Statistics and Computing*, 20, 231-252.
- Fox, E. B., Sudderth, E., Jordan, M. I., & Willsky, A. S. (2010). Bayesian nonparametric methods for learning Markov switching processes. *IEEE Signal Processing Magazine*, 27, 43-54.
- Ding, C., Li, T., & Jordan, M. I. (2010). Convex and semi-nonnegative matrix factorizations. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 32, 45-55.
- Zhang, Z., Dai, G., Xu, C., & Jordan, M. I., (2010). Regularized discriminant analysis, ridge regression and beyond. *Journal of Machine Learning Research*, 11, 2141-2170.
- Sankararaman, S., Obozinski, G., Jordan, M. I., & Halperin, E. (2009). Genomic privacy and the limits of individual detection in a pool. *Nature Genetics*, 41, 965-967.
- Nguyen, X., Wainwright, M., & Jordan, M. I. (2009). On surrogate loss functions and f -divergences. *Annals of Statistics*, 37, 876-904.
- Fukumizu, K., Bach, F. R., & Jordan, M. I. (2009). Kernel dimension reduction in regression. *Annals of Statistics*, 37, 1871-1905.

- Yin, J., Jordan, M. I., & Song, Y. (2009). Joint estimation of gene conversion rates and mean conversion tract lengths from population SNP data. *Bioinformatics*, 25, i231-i239.
- Sankararaman, S., Kimmel, G., Halperin, E., & Jordan, M. I. (2008). On the inference of ancestries in admixed populations. *Genome Research*, 18, 668-675.
- Wainwright, M. & Jordan, M. I. (2008). Graphical models, exponential families and variational inference. *Foundations and Trends in Machine Learning*, 1, 1-305.
- Kimmel, G., Karp, R., Jordan, M. I., & Halperin, E. (2008). Association mapping and significance estimation via the coalescent. *American Journal of Human Genetics*, 83, 675-683.
- Zhang, Z., & Jordan, M. I. (2008). Multiway spectral clustering: A margin-based perspective. *Statistical Science*, 23, 383-403.
- Flaherty, P., Radhakrishnan, M. A., Dinh, T., Jordan, M. I. & Arkin, A. P. (2008). A dual receptor cross-talk model of G protein-coupled signal transduction. *PLoS Computational Biology*, 4, e1000185.
- Nguyen, X., Wainwright, M., & Jordan, M. I. (2008). On optimal quantization rules for some sequential decision problems. *IEEE Transactions on Information Theory*, 54, 3285-3295.
- Obozinski, G., Grant, C. E., Lanckriet, G. R. G., Jordan, M. I., & Noble, W. S. (2008). Consistent probabilistic outputs for protein function prediction. *Genome Biology*, 9, S7.
- Pena-Castillo, L., Tasan, M., Myers, C., Lee, H., Joshi, T., Zhang, C., Guan, Y., Leone, M., Paganini, A., Kim, W., Krumpelman, C., Tian, W., Obozinski, G., Qi, Y., Mostafavi, S., Lin, G., Berriz, G., Gibbons, F., Lanckriet, G., Qiu, J., Grant, C., Barutcuoglu, Z., Hill, D., Warde-Farely, D., Grouios, C., Ray, D., Blake, J., Deng, M., Jordan, M., Noble, W., Morris, Q., Klein-Seetharaman, J., Bar-Joseph, Z., Chen, T., Sun, F., Troyanskaya, O., Marcotte, E., Xu, D., Hughes, T. & Roth, F. (2008). Quantitative gene function assignment from genomic datasets in *M. musculus*. *Genome Biology*, 9, S2.
- D'Aspremont, A., El Ghaoui, L., Jordan, M. I., & Lanckriet, G. R. G. (2007). A direct formulation for sparse PCA using semidefinite programming. *SIAM Review*, 49, 434-448.
- Kimmel, G., Jordan, M. I., Halperin, E., Shamir, R., & Karp, R. (2007). A randomization test for controlling population stratification in whole-genome association studies. *American Journal of Human Genetics*, 81, 895-905.
- Xing, E. P., Jordan, M. I., & Sharan, R. (2007). Bayesian haplotype inference via the Dirichlet process. *Journal of Computational Biology*, 14, 267-284.
- Teh, Y. W., Jordan, M. I., Beal, M. J., & Blei, D. M. (2006). Hierarchical Dirichlet processes. *Journal of the American Statistical Association*, 101, 1566-1581.
- Bartlett, P., Jordan, M. I., & McAuliffe, J. D. (2006). Convexity, classification and risk bounds. *Journal of the American Statistical Association*, 101, 138-156.
- Bach, F. R., & Jordan, M. I. (2006). Learning spectral clustering, with application to speech separation. *Journal of Machine Learning Research*, 7, 1963-2001.

- Wainwright, M. & Jordan, M. I. (2006). Log-determinant relaxation for approximate inference in discrete Markov random fields. *IEEE Transactions on Signal Processing*, 54, 2099-2109.
- McAuliffe, J. D., Blei, D. M., & Jordan, M. I. (2006). Nonparametric empirical Bayes for the Dirichlet process mixture model. *Statistics and Computing*, 16, 5-14.
- Taskar, B., Lacoste-Julien, S., & Jordan, M. I. (2006). Structured prediction, dual extragradient and Bregman projections. *Journal of Machine Learning Research*, 7, 1627-1653.
- Blei, D. M., Franks, K. Jordan, M. I. & Mian, S. (2006). Mining the Caenorhabditis Genetic Center bibliography for genes related to life span. *BMC Bioinformatics* 7, 250-269.
- McAuliffe, J. D., Jordan, M. I. & Pachter, L. (2005). Subtree power analysis and species selection for comparative genomics. *Proceedings of the National Academy of Sciences*, 102, 7900-7905.
- Engelhardt, B., Jordan, M. I., Muratore, K., & Brenner, S. (2005). Protein function prediction via Bayesian phylogenomics. *PLoS Computational Biology*, 1, e45.
- Blei, D. M., & Jordan, M. I. (2005). Variational inference for Dirichlet process mixtures. *Bayesian Analysis*, 1, 121-144.
- Gyaneshwar, P., Paliy, O., McAuliffe, J., Popham, D. L., Jordan, M. I., & Kustu, S. (2005). Lessons from *Escherichia coli* genes similarly regulated in response to nitrogen and sulfur limitation. *Proceedings of the National Academy of Sciences*, 102, 3453-3458.
- Nguyen, X., Wainwright, M., & Jordan, M. I. (2005). Nonparametric decentralized detection using kernel methods. *IEEE Transactions on Signal Processing*, 53, 4053-4066.
- Lee, W., St. Onge, R. P., Proctor, M., Flaherty, P., Jordan, M. I., Arkin, A. P., Davis, R. W., Nislow, C., & Giaever, G. (2005). Genome-wide requirements for resistance to functionally distinct DNA-damaging agents. *PLoS Genetics*, 1, 235-246.
- Gyaneshwar, P., Paliy, O., McAuliffe, J., Jones, A., Jordan, M. I., & Kustu, S. (2005). Sulfur and nitrogen limitation in *Escherichia coli* K12: specific homeostatic responses. *Journal of Bacteriology*, 187, 1074-1090.
- Nguyen, X., Jordan, M. I., & Sinopoli, B. (2005). A kernel-based learning approach to ad hoc sensor network localization. *ACM Transactions on Sensor Networks*, 1, 134-152.
- Flaherty, P., Giaever, G., Kumm, J., Jordan, M. I., & Arkin, A. P. (2005). A latent variable model for chemogenomic profiling. *Bioinformatics*, 21, 3286-3293.
- Jordan, M. I. (2004). Graphical models. *Statistical Science*, 19, 140-155.
- Giaever, G., Flaherty, P., Kumm, J., Proctor, M., Jaramillo, D. F., Chu, A. M., Jordan, M. I., Arkin, A. P. and Davis, R. W. (2004). Chemogenomic profiling: Identifying the functional interactions of small molecules in yeast. *Proceedings of the National Academy of Sciences*, 3, 793-798.
- McAuliffe, J. D., Pachter, L., & Jordan, M. I. (2004). Multiple-sequence functional annotation and the generalized hidden Markov phylogeny. *Bioinformatics*, 20, 1850-1860.

- Lanckriet, G. R. G., De Bie, T., Cristianini, N., Jordan, M. I., & Noble, W. S. (2004). A statistical framework for genomic data fusion. *Bioinformatics*, 20, 1-10.
- Bach, F. R., & Jordan, M. I. (2004). Learning graphical models for stationary time series. *IEEE Transactions on Signal Processing*, 52, 2189-2199.
- Fukumizu, K., Bach, F. R., & Jordan, M. I. (2004). Dimensionality reduction for supervised learning with reproducing kernel Hilbert spaces. *Journal of Machine Learning Research*, 5, 73-99.
- Sinopoli, B., Schenato, L., Franceschetti, M., Poolla, K., Jordan, M. I., & Sastry, S. (2004). Kalman filtering with intermittent observations. *IEEE Transactions on Automatic Control*, 49, 1453-1464.
- Xing, E. P., Wu, W., Jordan, M. I., & Karp, R. M. (2004). LOGOS: A modular Bayesian model for *de novo* motif detection. *Journal of Bioinformatics and Computational Biology*, 2, 127-154.
- Lanckriet, G. R. G., Cristianini, N., Bartlett, P., El Ghaoui, L., & Jordan, M. I. (2004). Learning the kernel matrix with semidefinite programming. *Journal of Machine Learning Research*, 5, 27-72.
- Bhattacharyya, C., Grate, L. R., Jordan, M. I., El Ghaoui, L., & Mian, I. S. (2004). Robust sparse hyperplane classifiers: application to uncertain molecular profiling data. *Journal of Computational Biology*, 11, 1073-1089.
- Corbin, R. W., Paliy, O., Yang, F., McAuliffe, J., Shabnowitz, J., Platt, M., Lyons, Jr., C. E., Root, K., Jordan, M. I., Kustu, S., Soupene, G., & Hunt, D. F. (2003). Toward a protein profile of *Escherichia coli*: comparison to its transcription profile. *Proceedings of the National Academy of Sciences*, 100, 9232-9237.
- Bach, F., & Jordan, M. I. (2003). Beyond independent components: Trees and clusters. *Journal of Machine Learning Research*, 4, 1205-1233.
- Barnard, K., Duygulu, P., De Freitas, N., Forsyth, D., Blei, D., & Jordan, M. I. (2003). Matching words and pictures. *Journal of Machine Learning Research*, 3, 1107-1135.
- Grate, L. R., Bhattacharyya, C., Jordan, M. I., & Mian, I. S. (2003). Integrated analysis of transcript profiling and protein sequence data. *Mechanisms of Ageing and Development*, 124, 109-114.
- Blei, D., Ng, A., & Jordan, M. I. (2003). Latent Dirichlet allocation. *Journal of Machine Learning Research*, 3, 993-1022.
- Bhattacharyya, C., Grate, L. R., Rizki, A., Radisky, D., Molina, F. J., Jordan, M. I., Bissell, M. J., & Mian, I. S. (2003). Simultaneous classification and relevant feature identification in high-dimensional spaces: Application to molecular profiling data. *Signal Processing*, 83, 729-743.
- Andrieu, C., De Freitas, J., Doucet, A., & Jordan, M. I. (2003). An introduction to MCMC for machine learning. *Machine Learning*, 50, 5-43.
- Todorov, E., & Jordan, M. I. (2002). Optimal feedback control as a theory of motor coordination. *Nature Neuroscience*, 5, 1226-1235.
- Bach, F. R., & Jordan, M. I. (2002). Kernel independent component analysis. *Journal of Machine Learning Research*, 3, 1-48.

- Houde, J., & Jordan, M. I. (2002). Sensorimotor adaptation of speech I: Compensation and adaptation. *Journal of Speech, Language, and Hearing Research*, 45.
- Lanckriet, G. R. G., El Ghaoui, L., Bhattacharyya, C., & Jordan, M. I. (2002). A robust minimax approach to classification. *Journal of Machine Learning Research*, 3, 555-582.
- Jaakkola, T., & Jordan, M. I. (2000). Bayesian parameter estimation via variational methods. *Statistics and Computing*, 10, 25-37.
- Ma, J., Xu, L., & Jordan, M. I. (2000). Asymptotic properties of the convergence rate of the EM algorithm for Gaussian mixtures. *Neural Computation*, 12, 2881-2908.
- Saul, L. K., & Jordan, M. I. (2000). Attractor dynamics in feedforward neural networks. *Neural Computation*, 12, 1313-1335.
- Meila, M., & Jordan, M. I. (2000). Learning with mixtures of trees. *Journal of Machine Learning Research*, 1, 1-48.
- Saul, L. K., & Jordan, M. I. (1999). Mixed memory Markov models: Decomposing complex stochastic processes as mixture of simpler ones. *Machine Learning*, 37, 75-87.
- Desmurget, M., Prablanc, C., Jordan, M. I., & Jeannerod, M. (1999). Are reaching movements planned to be straight and invariant in the extrinsic space? *Quarterly Journal of Experimental Psychology*, 52, 981-1020.
- Jordan, M. I., Ghahramani, Z., Jaakkola, T. S., & Saul, L. K. (1999). An introduction to variational methods for graphical models. *Machine Learning*, 37(2), 183-233.
- Jaakkola, T., & Jordan, M. I. (1999). Variational probabilistic inference and the QMR-DT network. *Journal of Artificial Intelligence Research*, 10, 291-322.
- Houde, J., & Jordan, M. I. (1998). Adaptation in speech production. *Science*, 279, 1213-1216.
- Sabes, P. N., Jordan, M. I., & Wolpert, D. M. (1998). The role of inertial sensitivity in motor planning. *Journal of Neuroscience*, 18, 5948-5959.
- Todorov, E., & Jordan, M. I. (1998). Smoothness maximization along a predefined path accurately predicts the speed profiles of complex arm movements. *Journal of Neurophysiology*, 80, 696-714.
- Smyth, P., Heckerman, D., & Jordan, M. I. (1997). Probabilistic independence networks for hidden Markov probability models. *Neural Computation*, 9, 227-270.
- Desmurget, M., Jordan, M. I., Prablanc, C. & Jeannerod, M. (1997). Constrained and unconstrained movements involve different control strategies. *Journal of Neurophysiology*, 77, 1644-1650.
- Sabes, P. N., & Jordan, M. I. (1997). Obstacle avoidance and a perturbation sensitivity model for motor planning. *Journal of Neuroscience*, 17, 7119-7128.
- Ghahramani, Z., & Jordan, M. I. (1997). Factorial Hidden Markov models. *Machine Learning*, 29, 245-273.

- Desmurget, M., Rossetti, Y., Jordan, M. I., Meckler, C. & Prablanc, C. (1997). Viewing the hand prior to movement improves accuracy of pointing performed toward the unseen contralateral hand. *Experimental Brain Research*, 115, 180–186.
- Xu, L., & Jordan, M. I. (1996). On convergence properties of the EM algorithm for Gaussian mixtures. *Neural Computation*, 8, 129–151.
- Saul, L. K., Jaakkola, T., & Jordan, M. I. (1996). Mean field theory for sigmoid belief networks. *Journal of Artificial Intelligence Research*, 4, 61–76.
- Alpaydin, E., & Jordan, M. I. (1996). Local linear perceptrons for classification. *IEEE Transactions on Neural Networks*, 7, 788–792.
- Cohn, D., Ghahramani, Z., & Jordan, M. I. (1996). Active learning with statistical models. *Journal of Artificial Intelligence Research*, 4, 129–145.
- Jordan, M. I., & Bishop, C. (1996). Neural networks. *Computing Surveys*, 28, 73–75.
- Ghahramani, Z., Wolpert, D., & Jordan, M. I. (1996). Generalization to local remappings of the visuo-motor coordinate transformation. *Journal of Neuroscience*, 16, 7085–7096.
- Jordan, M. I. (1995). The organization of action sequences: Evidence from a relearning task. *Journal of Motor Behavior*, 27, 179–192.
- Wolpert, D., Ghahramani, Z., & Jordan, M. I. (1995). Are arm trajectories planned in kinematic or dynamic coordinates? An adaptation study. *Experimental Brain Research*, 103, 460–470.
- Wolpert, D., Ghahramani, Z., & Jordan, M. I. (1995). An internal forward model for sensorimotor integration. *Science*, 269, 1880–1882.
- Houde, J. & Jordan, M. I. (1995). Adaptation in speech production to transformed auditory feedback. *Journal of the Acoustical Society of America*, 97, 3243.
- Jordan, M. I., & Xu, L. (1995). Convergence results for the EM approach to mixtures-of-experts architectures. *Neural Networks*, 8, 1409–1431.
- Houde, J. & Jordan, M. I. (1995). Patterns of generalization in speech sensorimotor adaptation. *Journal of the Acoustical Society of America*, 100, 2663.
- Jordan, M. I., & Jacobs, R. A. (1994). Hierarchical mixtures of experts and the EM algorithm. *Neural Computation*, 6, 181–214.
- Saul, L. K., & Jordan, M. I. (1994). Learning in Boltzmann trees. *Neural Computation*, 6, 1173–1183.
- Jaakkola, T., Jordan, M. I., & Singh, S. P. (1994). On the convergence of stochastic iterative dynamic programming algorithms. *Neural Computation*, 6, 1183–1190.
- Wolpert, D., Ghahramani, Z., & Jordan, M. I. (1994). Perceptual distortion contributes to the curvature of human reaching movements. *Experimental Brain Research*, 98, 153–156.
- Jordan, M. I., Flash, T., & Arnon, Y. (1994). A model of the learning of arm trajectories from spatial targets. *Journal of Cognitive Neuroscience*, 6, 359–376.

- Perkell, J. S., Matthies, M. L., Svirsky, M. A., & Jordan, M. I. (1993). Trading relations between tongue-body raising and lip rounding in production of the vowel /u/: A pilot motor equivalence study. *Journal of the Acoustical Society of America*, 93, 2948–2961.
- Jacobs, R. A. & Jordan, M. I. (1993). Learning piecewise control strategies in a modular neural network architecture. *IEEE Transactions on Systems, Man, and Cybernetics*, 23, 337–345.
- Hirayama, M., Kawato, M., & Jordan, M. I. (1993). The cascade neural network model and a speed-accuracy tradeoff of arm movement. *Journal of Motor Behavior*, 25, 162–175.
- Jordan, M. I. (1992). Constrained supervised learning. *Journal of Mathematical Psychology*, 36, 396–425.
- Jordan, M. I., & Rumelhart, D. E. (1992). Forward models: Supervised learning with a distal teacher. *Cognitive Science*, 16, 307–354.
- Jacobs, R. A., & Jordan, M. I. (1992). Computational consequences of a bias towards short connections. *Journal of Cognitive Neuroscience*, 4, 331–344.
- Jacobs, R. A., Jordan, M. I., Nowlan, S., & Hinton, G. E. (1991). Adaptive mixtures of local experts. *Neural Computation*, 3, 1–12.
- Mazzoni, P., Andersen, R., & Jordan, M. I. (1991). A more biologically plausible learning network model for neural networks. *Proceedings of the National Academy of Sciences*, 88, 4433–4437.
- Jacobs, R. A., Jordan, M. I., & Barto, A. G. (1991). Task decomposition through competition in a modular connectionist architecture: The what and where vision tasks. *Cognitive Science*, 15, 219–250.
- Mazzoni, P., Andersen, R., & Jordan, M. I. (1991). A more biologically plausible learning rule than backpropagation applied to a network model of cortical area 7a. *Cerebral Cortex*, 1, 293–307.
- Bailly, G., Jordan, M. I., Mantakas, M., Schwartz, J-L., Bach, M., & Olesen, O. (1990). Simulation of vocalic gestures using an articulatory model driven by a sequential neural network. *Journal of the Acoustical Society of America*, 87:S105.
- Jordan, M. I. (1990). A non-empiricist perspective on learning in layered networks. *Behavioral and Brain Sciences*, 13, 497–498.

INVITED JOURNAL ARTICLES

- Jordan, M. I. (2011). Message From the President: The era of Big Data. *The ISBA Bulletin*, 18(2), 1-3.
- Jordan, M. I. (2011). Message From the President: What are the open problems in Bayesian statistics? *The ISBA Bulletin*, 18(1), 1-4.
- Jordan, M. I. (2010). Leo Breiman. *Annals of Applied Statistics*, 4, 1642-1643.
- Bartlett, P., Jordan, M. I., & McAuliffe, J. D. (2006). Discussion of “Support vector machines with applications.” *Statistical Science*, 21, 341-346.

Bartlett, P., Jordan, M. I., & McAuliffe, J. (2004). Discussion of boosting papers. *Annals of Statistics*, 32, 85-91.

REFEREED CONFERENCE PROCEEDINGS

- Thananjeyan, B., Kandasamy, K., Stoica, I., Jordan, M. I., Goldberg, K., & Gonzalez, J. (2021). Resource allocation in multi-armed bandit exploration: Overcoming sublinear scaling with adaptive parallelism. In M. Meila and T. Zhang (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Rolf, E., Worledge, T., Recht, B., & Jordan, M. I. (2021). Representation matters: Assessing the importance of subgroup allocations in training data. In M. Meila and T. Zhang (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Tripuraneni, N., Jin, C., & Jordan, M. I. (2021). Provable meta-learning of linear representations. In M. Meila and T. Zhang (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Diakonikolas, J., Daskalakis, C., & Jordan, M. I. (2021). Efficient methods for structured nonconvex-nonconcave min-max optimization. A. Banerjee and K. Fukumizu, (Eds.), *Proceedings of the Twenty-Fourth Conference on Artificial Intelligence and Statistics (AISTATS)*.
- Lin, T., Zheng, R., Chen, E., Cuturi, M., & Jordan, M. I. (2021). On projection robust optimal transport: Sample complexity and model misspecification. A. Banerjee and K. Fukumizu, (Eds.), *Proceedings of the Twenty-Fourth Conference on Artificial Intelligence and Statistics (AISTATS)*.
- Angelopoulos, A., Bates, S., Malik, J., & Jordan, M. I. (2021). Uncertainty sets for image classifiers using conformal prediction. *International Conference on Learning Representations (ICLR)*.
- Jerfel, G., Wang, S., Fannjiang, C., Heller, K., Ma, Y.-A., & Jordan, M. I. (2021). Variational refinement for importance sampling using the forward Kullback-Leibler divergence. *Third Symposium on Advances in Approximate Bayesian Inference (AABI)*.
- Lopez, R., Dhillon, I., & Jordan, M. I. (2021). Learning from eXtreme bandit feedback. *Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI-21)*. Vancouver, Canada.
- Pacchiano, A., Jiang, H., & Jordan, M. I. (2021). Robustness guarantees for mode estimation with an application to bandits. *Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI-21)*. Vancouver, Canada.
- Chua, A., Jordan, M. I., & Muller, R. (2021). Unsupervised online learning classifier for seizure detection. *2021 Symposium on VLSI Circuits*. Kyoto, Japan.
- Wang, S., Guo, W., Narasimhan, H., Cotter, A., Gupta, M., & Jordan, M. I. (2020). Robust optimization for fairness with noisy protected groups. In H. Larochelle, M. Ranzato, R. Hadsell, M. F. Balcan, and H.-T. Lin (Eds.), *Advances in Neural Information Processing (NeurIPS) 33*, Red Hook, NY: Curran Associates.

- Lopez R., Boyeau, P., Regier, J., Jordan, M. I., & Yosef, N. (2020). Decision-making with auto-encoding variational Bayes. In H. Larochelle, M. Ranzato, R. Hadsell, M. F. Balcan, and H.-T. Lin (Eds), *Advances in Neural Information Processing (NeurIPS) 33*, Red Hook, NY: Curran Associates.
- Lin, T., Zheng, Z., Chen, E., Cuturi, M., & Jordan, M. I. (2020). Projection robust Wasserstein distance and Riemannian optimization. In H. Larochelle, M. Ranzato, R. Hadsell, M. F. Balcan, and H.-T. Lin (Eds), *Advances in Neural Information Processing (NeurIPS) 33*, Red Hook, NY: Curran Associates.
- Wang, X., Long, M., Wang, J., & Jordan, M. I. (2020). Transferable calibration with lower bias and variance in domain adaptation. In H. Larochelle, M. Ranzato, R. Hadsell, M. F. Balcan, and H.-T. Lin (Eds), *Advances in Neural Information Processing (NeurIPS) 33*, Red Hook, NY: Curran Associates.
- Lin, T., Ho, N., Chen, X., Cuturi, M., & Jordan, M. I. (2020). Fixed-support Wasserstein barycenters: Computational hardness and fast algorithm. In H. Larochelle, M. Ranzato, R. Hadsell, M. F. Balcan, and H.-T. Lin (Eds), *Advances in Neural Information Processing (NeurIPS) 33*, Red Hook, NY: Curran Associates.
- Tripuraneni, N., Jin, C., & Jordan, M. I. (2020). On the theory of transfer learning: The importance of task diversity. In H. Larochelle, M. Ranzato, R. Hadsell, M. F. Balcan, and H.-T. Lin (Eds), *Advances in Neural Information Processing (NeurIPS) 33*, Red Hook, NY: Curran Associates.
- Wang, Z., Jin, C., Yang, Z., Wang, M., & Jordan, M. I. (2020). Provably efficient reinforcement learning with kernel and neural function approximation. In H. Larochelle, M. Ranzato, R. Hadsell, M. F. Balcan, and H.-T. Lin (Eds), *Advances in Neural Information Processing (NeurIPS) 33*, Red Hook, NY: Curran Associates.
- Mazumdar, E., Westenbroek, T., Jordan, M. I., & Sastry, S. (2020). High-confidence sets for trajectories of stochastic time-varying nonlinear systems. *Proceedings of the 59th IEEE Conference on Decision and Control (CDC)*, Jeju Island, Korea.
- Lin, T., Jin, C., & Jordan, M. I. (2020). On gradient descent ascent for nonconvex-concave minimax problems. In H. Daumé III and A. Singh (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Mazumdar, E., Pacchiano, A., Ma, Y., Bartlett, P., & Jordan, M. I. (2020). On Thompson sampling with Langevin algorithms. In H. Daumé III and A. Singh (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Cheng, X., Yin, D., Bartlett, P., & Jordan, M. I. (2020). Stochastic gradient and Langevin processes. In H. Daumé III and A. Singh (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Pacchiano, A., Parker-Holder, J., Tang, Y., Choromanski, K., Choromanska, A., & Jordan, M. I. (2020). Learning to score behaviors for guided policy optimization. In H. Daumé III and A. Singh (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.

- Müelebach, M., & Jordan, M. I. (2020). Continuous-time lower bounds for gradient-based algorithms. In H. Daumé III and A. Singh (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Jin, C., Netrapalli, P., & Jordan, M. I. (2020). What is local optimality in nonconvex-nonconcave min-max optimization? In H. Daumé III and A. Singh (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Lin, T., Zhou, Z., Mertikopoulos, P., & Jordan, M. I. (2020). Finite-time last-iterate convergence for multi-agent learning in games. In H. Daumé III and A. Singh (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Lee, J., Pacchiano, A., Bartlett, P., & Jordan, M. I. (2020). Accelerated message passing for entropy-regularized MAP inference. In H. Daumé III and A. Singh (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Lin, T., Jin, C., & Jordan, M. I. (2020). Near-optimal algorithms for minimax optimization. In *Proceedings of the Conference on Computational Learning Theory (COLT)*, Graz, Austria.
- Jin, C., Yang, Z., Wang, Z., & Jordan, M. I. (2020). Provably efficient reinforcement learning with linear function approximation. In *Proceedings of the Conference on Computational Learning Theory (COLT)*, Graz, Austria.
- Mou, W., Li, J., Wainwright, M., Bartlett, P., & Jordan, M. I. (2020). Fine-grained analysis for linear stochastic approximation with averaging: Polyak-Ruppert, non-asymptotic concentration and beyond. In *Proceedings of the Conference on Computational Learning Theory (COLT)*, Graz, Austria.
- Chua, A., Jordan, M. I., & Muller, R. (2020). Unsupervised online learning for long-term high sensitivity seizure detection. *42nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, Montréal, Canada.
- Lin, T., Jin, C., & Jordan, M. I. (2020). Near-optimal algorithms for smooth convex-concave minimax optimization and beyond. INFORMS Optimization Society Conference (IOS), Greenville, SC.
- Mazumdar, E., Ratliff, L., Jordan, M. I., & Sastry, S. (2020). Policy-gradient algorithms have no guarantees of convergence in linear-quadratic games. *International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS)*, Auckland, New Zealand.
- Lin, T., Fan, C., Wang, M., & Jordan, M. I. (2020). Improved sample complexity for stochastic compositional variance reduced gradient. *American Control Conference (ACC)*, Denver, CO.
- Liu, L., Mania, H., & Jordan, M. I. (2020). Competing bandits in matching markets. In R. Calandra and S. Chiappa (Eds.), *Proceedings of the Twenty-Third Conference on Artificial Intelligence and Statistics (AISTATS)*, Palermo, Italy.
- Chatterji, N., Diakonikolas, J., Jordan, M. I., & Bartlett, P. (2020). Langevin Monte Carlo without smoothness. In R. Calandra and S. Chiappa (Eds.), *Proceedings of the Twenty-Third Conference on Artificial Intelligence and Statistics (AISTATS)*, Palermo, Italy.

- Zrnic, T., Jiang, D., Ramdas, A., & Jordan, M. I. (2020). The power of batching in multiple hypothesis testing. In R. Calandra and S. Chiappa (Eds.), *Proceedings of the Twenty-Third Conference on Artificial Intelligence and Statistics (AISTATS)*, Palermo, Italy.
- Guo, W., Ho, N., & Jordan, M. I. (2020). Fast algorithms for computational optimal transport and Wasserstein barycenter. In R. Calandra and S. Chiappa (Eds.), *Proceedings of the Twenty-Third Conference on Artificial Intelligence and Statistics (AISTATS)*, Palermo, Italy.
- Dwivedi, R., Ho, N., Khamaru, K., Wainwright, M., Jordan, M. I., & Yu, B. (2020). Sharp analysis of expectation-maximization for weakly identifiable models. In R. Calandra and S. Chiappa (Eds.), *Proceedings of the Twenty-Third Conference on Artificial Intelligence and Statistics (AISTATS)*, Palermo, Italy.
- Lee, J., Pacchiano, A., & Jordan, M. I. (2020). Convergence rates of smooth message passing with rounding in entropy-regularized MAP inference. In R. Calandra and S. Chiappa (Eds.), *Proceedings of the Twenty-Third Conference on Artificial Intelligence and Statistics (AISTATS)*, Palermo, Italy.
- Rolf, E., Jordan, M. I., & Recht, B. (2020). Post-estimation smoothing: A simple baseline for learning with side information. In R. Calandra and S. Chiappa (Eds.), *Proceedings of the Twenty-Third Conference on Artificial Intelligence and Statistics (AISTATS)*, Palermo, Italy.
- Chen, J., & Jordan, M. I. (2020). LS-Tree: Model interpretation when the data are linguistic. *Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI-20)*. New York, NY.
- Elibol, M., Lei, L., & Jordan, M. I. (2020). Variance reduction with sparse gradients. *International Conference on Learning Representations (ICLR)*, Addis Ababa, Ethiopia.
- Yang, P., Chen, J., Hsieh, C.-J., Wang, J.-L., & Jordan, M. I. (2020). ML-LOO: Detecting adversarial examples with feature attribution. *Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI-20)*. New York, NY.
- Lopez, R., Li, C., Yan, X., Xiong, J., Jordan, M. I., Qi, Y., & Song, L. Cost-effective incentive allocation via structured counterfactual inference. *Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI-20)*. New York, NY.
- Chen, J., Jordan, M. I., & Wainwright, M. (2020). HopSkipJumpAttack: A query-efficient decision-based attack. *41st IEEE Symposium on Security and Privacy*, San Francisco, CA.
- Shi, B., Du, S., Su, W., & Jordan, M. I. (2019). Acceleration via symplectic discretization of high-resolution differential equations. In H. Wallach, H. Larochelle, A. Beygelzimer, F. d’Alché-Buc, E. Fox, and R. Garnett (Eds.), *Advances in Neural Information Processing (NeurIPS) 32*, Red Hook, NY: Curran Associates.
- Wang, X., Jin, Y., Long, M., Wang, J., & Jordan, M. I. (2019). Transferable normalization: Towards improving transferability of deep neural networks. In H. Wallach, H. Larochelle, A. Beygelzimer, F. d’Alché-Buc, E. Fox, and R. Garnett (Eds.), *Advances in Neural Information Processing (NeurIPS) 32*, Red Hook, NY: Curran Associates.
- Liu, L., Mania, H., & Jordan, M. I. (2019). Multi-agent bandits in matching markets. *Economics and Computation Workshop on Machine Learning in the Presence of Strategic Behavior*, Phoenix, AZ.

- Ho, N., Nguyen, T., Patel, A., Anandkumar, A., Jordan, M. I., & Baraniuk R. (2019). Neural rendering model: Rethinking neural networks from the joint generation and prediction perspective. *Conference on the Mathematical Theory of Deep Neural Networks*, New York, NY.
- Lopez, R., Nazaret, R., Langevin, M. Samaran, J., Regier, J., Jordan, M. I., & Yosef, N. (2019). A joint model of unpaired data from scRNA-seq and spatial transcriptomics for imputing missing gene expression measurements. *International Conference on Machine Learning (ICML) Workshop on Computational Biology*, Long Beach, CA.
- Müelebach, M. & Jordan, M. I. (2019). A dynamical systems perspective on Nesterov acceleration. In K. Chaudhuri and R. Salakhutdinov (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Lin, T., Ho, N., & Jordan, M. I. (2019). On efficient optimal transport: An analysis of greedy and accelerated mirror descent algorithms. In K. Chaudhuri and R. Salakhutdinov (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Zhang, Y., Liu, T., Long, M., & Jordan, M. I. (2019). Bridging theory and algorithm for domain adaptation. In K. Chaudhuri and R. Salakhutdinov (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Liu, H., Long, M., Wang, J., & Jordan, M. I. (2019). Transferable adversarial training: A general approach to adapting deep classifiers. In K. Chaudhuri and R. Salakhutdinov (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Zhang, H., Yu, Y., Jiao, J., Xing, E., El Ghaoui, L., & Jordan, M. I. (2019). Theoretically principled trade-off between robustness and accuracy. In K. Chaudhuri and R. Salakhutdinov (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- You, K., Wang, X., Long, M., & Jordan, M. I. (2019). Towards accurate model selection in deep unsupervised domain adaptation. In K. Chaudhuri and R. Salakhutdinov (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Liu, R., Regier, J., Tripuraneni, N., McAuliffe, J., & Jordan, M. I. (2019). Rao-Blackwellized stochastic gradients for discrete distributions. In K. Chaudhuri and R. Salakhutdinov (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Giordano, R., Stephenson, W., Liu, R., Jordan, M. I. & Broderick, T. (2019). A Swiss army infinitesimal jackknife. In K. Chaudhuri and M. Sugiyama (Eds.), *Proceedings of the Twenty-Second Conference on Artificial Intelligence and Statistics (AISTATS)*, Okinawa, Japan.
- Ho, N., Huynh, V., Phung, D., & Jordan, M. I. (2019). Probabilistic multilevel clustering via composite transportation distance. In K. Chaudhuri and M. Sugiyama (Eds.), *Proceedings of the Twenty-Second Conference on Artificial Intelligence and Statistics (AISTATS)*, Okinawa, Japan.
- You, K., Cao, Z., Long, M., Wang, J., & Jordan, M. I. (2019). Universal domain adaptation. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Long Beach, CA.
- Chen, J., Song, L., Wainwright, M., & Jordan, M. I. (2019). L-Shapley and C-Shapley: Efficient model interpretation for structured data. *International Conference on Learning Representations (ICLR)*, New Orleans, LA.

- Moritz, P., Nishihara, R., Wang, S., Tumanov, A., Liaw, R., Liang, E., Jordan, M. I., & Stoica, I., (2018). Ray: A distributed framework for emerging AI applications. In *13th USENIX Symposium on Operating Systems Design and Implementation (OSDI)*, Carlsbad, CA.
- Jordan, M. I. (2018). Dynamical, symplectic and stochastic perspectives on gradient-based optimization. In *Proceedings of the International Congress of Mathematicians*, Rio de Janeiro, Brazil.
- Jin, C., Allen-Zhu, Z., Bubeck, S., & Jordan, M. I. (2018). Is Q-Learning provably efficient? In S. Vishwanathan, H. Wallach, Larochelle, S., Grauman, K., & Cesa-Bianchi, N. (Eds.), *Advances in Neural Information Processing (NIPS) 31*, Red Hook, NY: Curran Associates.
- Lopez, R., Regier, J., Yosef, N., & Jordan, M. I. (2018). Information constraints on auto-encoding variational Bayes. In S. Vishwanathan, H. Wallach, Larochelle, S., Grauman, K., & Cesa-Bianchi, N. (Eds.), *Advances in Neural Information Processing (NIPS) 31*, Red Hook, NY: Curran Associates.
- Bhatia, K., Pacchiano, A., Flammarion, N., Bartlett, P., & Jordan, M. I. (2018). Gen-Oja: Simple and efficient algorithm for streaming generalized eigenvector computation. In S. Vishwanathan, H. Wallach, Larochelle, S., Grauman, K., & Cesa-Bianchi, N. (Eds.), *Advances in Neural Information Processing (NIPS) 31*, Red Hook, NY: Curran Associates.
- Dwivedi, R., Ho, N., Khamaru, K., Wainwright, M., & Jordan, M. I. (2018). Theoretical guarantees for EM under misspecified Gaussian mixture models. In S. Vishwanathan, H. Wallach, Larochelle, S., Grauman, K., & Cesa-Bianchi, N. (Eds.), *Advances in Neural Information Processing (NIPS) 31*, Red Hook, NY: Curran Associates.
- Jin, C., Liu, L., Ge, R., & Jordan, M. I. (2018). On the local minima of the empirical risk. In S. Vishwanathan, H. Wallach, Larochelle, S., Grauman, K., & Cesa-Bianchi, N. (Eds.), *Advances in Neural Information Processing (NIPS) 31*, Red Hook, NY: Curran Associates.
- Tripuraneni, N., Stern, M., Jin, C., Regier, J., & Jordan, M. I. (2018). Stochastic cubic regularization for fast nonconvex optimization. In S. Vishwanathan, H. Wallach, Larochelle, S., Grauman, K., & Cesa-Bianchi, N. (Eds.), *Advances in Neural Information Processing (NIPS) 31*, Red Hook, NY: Curran Associates.
- Liu, S., Long, M., Wang, J., & Jordan, M. I. (2018). Generalized zero-shot learning with deep calibration network. In S. Vishwanathan, H. Wallach, Larochelle, S., Grauman, K., & Cesa-Bianchi, N. (Eds.), *Advances in Neural Information Processing (NIPS) 31*, Red Hook, NY: Curran Associates.
- Long, M., Cao, Z., Wang, J., & Jordan, M. I. (2018). Conditional adversarial domain adaptation. In S. Vishwanathan, H. Wallach, Larochelle, S., Grauman, K., & Cesa-Bianchi, N. (Eds.), *Advances in Neural Information Processing (NIPS) 31*, Red Hook, NY: Curran Associates.
- Tripuraneni, N., Flammarion, N., Bach, F., & Jordan, M. I. (2018). Averaged stochastic gradient descent on Riemannian manifolds. In *Proceedings of the Conference on Computational Learning Theory (COLT)*, Stockholm, Sweden.
- Simchowitz, M., Mania, H., Tu, S., Jordan, M. I., & Recht, B. (2018). Learning without mixing: Towards a sharp analysis of linear system identification. In *Proceedings of the Conference on Computational Learning Theory (COLT)*, Stockholm, Sweden.

- El Alaoui, A., & Jordan, M. I. (2018). Detection limits in the high-dimensional spiked rectangular model. In *Proceedings of the Conference on Computational Learning Theory (COLT)*, Stockholm, Sweden.
- Cheng, X., Chatterji, N., Bartlett, P., & Jordan, M. I. (2018). Underdamped Langevin MCMC: A non-asymptotic analysis. In *Proceedings of the Conference on Computational Learning Theory (COLT)*, Stockholm, Sweden.
- Jin, C., Netrapalli, P., & Jordan, M. I. (2018). Accelerated gradient descent escapes saddle points faster than gradient descent. In *Proceedings of the Conference on Computational Learning Theory (COLT)*, Stockholm, Sweden.
- Chatterji, N., Flammarion, N., Ma, Y.-A., Bartlett, P., & Jordan, M. I. (2018). On the theory of variance reduction for stochastic gradient Monte Carlo. In J. Dy and A. Krause (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Bulatov, Y., Nishihara, R., Moritz, P., Elibol, M., Jordan, M. I., & Stoica, I., (2018). Flexible primitives for distributed deep learning in Ray. In *Systems and Machine Learning Conference*, Palo Alto, CA.
- Cao, Z., Long, M., Wang, J., & Jordan, M. I. (2018). Partial transfer learning with selective adversarial networks. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Salt Lake City, UT.
- Chen, J., Song, L., Wainwright, M., & Jordan, M. I. (2018). Learning to explain: An information-theoretic perspective on model interpretation. In J. Dy and A. Krause (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Liaw, R., Liang, E., Moritz, P., Nishihara, R., Fox, R., Goldberg, K., Gonzalez, J., Jordan, M. I., & Stoica, I., (2018). Ray RLlib: Abstractions for distributed reinforcement learning. In J. Dy and A. Krause (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Ramdas, A., Zrnic, T., Wainwright, M., & Jordan, M. I. (2018). SAFFRON: An adaptive algorithm for online control of the false discovery rate. In J. Dy and A. Krause (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Du, S., Jin, C., Lee, J., Jordan, M. I., Póczos, B., & Singh, A. (2018). Gradient descent can take exponential time to escape saddle points. In S. Bengio, R. Fergus, S. Vishwanathan & H. Wallach (Eds.), *Advances in Neural Information Processing (NIPS) 31*, Red Hook, NY: Curran Associates.
- Lei, L., Chen, J., & Jordan, M. I. (2018). Non-convex finite-sum optimization via SCSG methods. In S. Bengio, R. Fergus, S. Vishwanathan & H. Wallach (Eds.), *Advances in Neural Information Processing (NIPS) 31*, Red Hook, NY: Curran Associates.
- Regier, J., McAuliffe, J., & Jordan, M. I. (2018). Fast black-box variational inference through stochastic trust-region optimization. In S. Bengio, R. Fergus, S. Vishwanathan & H. Wallach (Eds.), *Advances in Neural Information Processing (NIPS) 31*, Red Hook, NY: Curran Associates.
- Ramdas, A., Yang, F., Wainwright, M., & Jordan, M. I. (2018). Online control of the false discovery rate with decaying memory. In S. Bengio, R. Fergus, S. Vishwanathan & H. Wallach (Eds.), *Advances in Neural Information Processing (NIPS) 31*, Red Hook, NY: Curran Associates.

- Chen, J., Stern, M., Wainwright, M., & Jordan, M. I. (2018). Kernel feature selection via conditional covariance minimization. In S. Bengio, R. Fergus, S. Vishwanathan & H. Wallach (Eds.), *Advances in Neural Information Processing (NIPS) 31*, Red Hook, NY: Curran Associates.
- Ramdas, A., Chen, J., Wainwright, M., & Jordan, M. I. (2017). QuTE algorithms for decentralized decision making on networks with false discovery rate control. *56th IEEE Conference on Decision and Control*, Melbourne, Australia.
- Jin, C., Ge, R., Netrapalli, P., Kakade, S., & Jordan, M. I. (2017). How to escape saddle points efficiently. In D. Precup and Y. W. Teh (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Tu, S., Venkataraman, S., Wilson, A., Gittens, A., Jordan, M. I., & Recht, B. (2017). Breaking locality accelerates block Gauss-Seidel. In D. Precup and Y. W. Teh (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Long, M., Zhu, H., Wang, J., & Jordan, M. I. (2017). Deep transfer learning with joint adaptation networks. In D. Precup and Y. W. Teh (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Nishihara, R., Moritz, P., Wang, S., Tumanov, A., Paul, W., Schleier-Smith, J., Liaw, R., Jordan, M. I., & Stoica, I. (2017). Real-time machine learning: The missing pieces. *16th Workshop on Hot Topics in Operating Systems (HotOS XVI)*. Whistler, Canada.
- Lei, L. & Jordan, M. I. (2017). Less than a single pass: Stochastically controlled stochastic gradient. In A. Singh and J. Zhu (Eds.), *Proceedings of the Twentieth Conference on Artificial Intelligence and Statistics (AISTATS)*, Ft. Lauderdale, FL.
- Zhang, Y., Lee, J., Wainwright, M., & Jordan, M. I. (2017). On the learnability of fully-connected neural networks. In A. Singh and J. Zhu (Eds.), *Proceedings of the Twentieth Conference on Artificial Intelligence and Statistics (AISTATS)*, Ft. Lauderdale, FL.
- Pan, X., Lam, M., Tu, S., Jordan, M. I., Papailiopoulos, D., Zhang, C., Ramchandran, K., Re, C., & Recht, B. (2017). CYCLADES: Conflict-free asynchronous machine learning. In C. Cortes, N. Lawrence, I. Guyon & U. von Luxburg (Eds.), *Advances in Neural Information Processing (NIPS) 30*, Red Hook, NY: Curran Associates.
- Jin, C., Zhang, Y., Balakrishnan, S., Wainwright, M., & Jordan, M. I. (2017). On local maxima in the population likelihood of Gaussian mixture models: Structural results and algorithmic consequences. In C. Cortes, N. Lawrence, I. Guyon & U. von Luxburg (Eds.), *Advances in Neural Information Processing (NIPS) 30*, Red Hook, NY: Curran Associates.
- Long, M., Zhu, H., Wang, J., & Jordan, M. I. (2017). Unsupervised domain adaptation with residual transfer networks. In C. Cortes, N. Lawrence, I. Guyon & U. von Luxburg (Eds.), *Advances in Neural Information Processing (NIPS) 30*, Red Hook, NY: Curran Associates.
- Lee, J., Simchowitz, M., Recht, B., & Jordan, M. I. (2016). Gradient descent only converges to minimizers. *Proceedings of the Conference on Computational Learning Theory (COLT)*, New York, NY.

- El Alaoui, A., Cheng, X., Ramdas, A., Wainwright, M., & Jordan, M. I. (2016). Asymptotic behavior of ℓ_p -based Laplacian regularization in semi-supervised learning *Proceedings of the Conference on Computational Learning Theory (COLT)*, New York, NY.
- Zhang, Y., Lee, J., & Jordan, M. I. (2016). L1-regularized neural networks are improperly learnable in polynomial time. In N. Balcan and K. Weinberger (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Liu, Q., Lee, J., & Jordan, M. I. (2016). A kernelized Stein discrepancy for goodness-of-fit tests and model evaluation. In N. Balcan and K. Weinberger (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Moritz, P., Nishihara, R. & Jordan, M. I. (2016). A linearly-convergent stochastic L-BFGS algorithm. In A. Gretton and C. Robert (Eds.), *Proceedings of the Nineteenth Conference on Artificial Intelligence and Statistics (AISTATS)*, Cadiz, Spain.
- Moritz, P., Nishihara, R., Stoica, I., & Jordan, M. I. (2016). SparkNet: Training deep networks in Spark. *International Conference on Learning Representations (ICLR)*, Puerto Rico.
- Schulman, J., Moritz, P., Levine, S., Jordan, M. I., & Abbeel, P. (2016). High-dimensional continuous control using generalized advantage estimation. *International Conference on Learning Representations (ICLR)*, Puerto Rico.
- Nie, F., Wang, X., Jordan, M. I., & Huang, H. (2016). The constrained Laplacian rank algorithm for graph-based clustering. Thirtieth AAAI Conference on Artificial Intelligence, Phoenix, AZ.
- Pan, X., Papailiopoulos, D., Oymak, S., Recht, B., Ramchandran, K., & Jordan, M. I. (2016). Parallel correlation clustering on big graphs. In D. Lee, M. Sugiyama, C. Cortes and N. Lawrence (Eds.), *Advances in Neural Information Processing (NIPS) 29*, Red Hook, NY: Curran Associates.
- Rabinovich, M., Angelino, E., & Jordan, M. I. (2016). Variational consensus Monte Carlo. In D. Lee, M. Sugiyama, C. Cortes and N. Lawrence (Eds.), *Advances in Neural Information Processing (NIPS) 29*, Red Hook, NY: Curran Associates.
- Giordano, R., Broderick, T., & Jordan, M. I. (2016). Linear response methods for accurate covariance estimates from mean field variational Bayes. In D. Lee, M. Sugiyama, C. Cortes and N. Lawrence (Eds.), *Advances in Neural Information Processing (NIPS) 29*, Red Hook, NY: Curran Associates.
- Rabinovich, M., Andreas, J., Klein, D., & Jordan, M. I. (2016). On the accuracy of self-normalized linear models. In D. Lee, M. Sugiyama, C. Cortes and N. Lawrence (Eds.), *Advances in Neural Information Processing (NIPS) 29*, Red Hook, NY: Curran Associates.
- Sparks, E., Talwalkar, A., Haas, D., Franklin, M., Jordan, M. I., & Kraska, T. (2015). Automating model search for large scale machine learning. *ACM Symposium on Cloud Computing (SOCC)*, Kohala Coast, Hawaii.
- Nishihara, R., Lessard, L., Recht, B., Packard, A. & Jordan, M. I. (2015). A general analysis of the convergence of ADMM. In F. Bach and D. Blei (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.

- Zhang, Y., Wainwright, M., & Jordan, M. I. (2015). Distributed estimation of generalized matrix rank: Efficient algorithms and lower bounds. In F. Bach and D. Blei (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Ma, C., Smith, V., Jaggi, M., Jordan, M. I., Richtárik & Takáč, M. (2015). Adding vs. averaging in distributed primal-dual optimization. In F. Bach and D. Blei (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Schulman, J., Moritz, P., Levine, S., Jordan, M. I., & Abbeel, P. (2015). Trust region policy optimization. In F. Bach and D. Blei (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Long, M., Wang, J. Cao, Y., & Jordan, M. I. (2015). Learning transferable features with deep adaptation networks. In F. Bach and D. Blei (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Moldovan, T., Levine, S., Jordan, M. I., & Abbeel, P. (2015). Optimism-driven exploration for nonlinear systems. *IEEE International Conference on Robotics and Automation*, Seattle, WA.
- Crankshaw, D., Bailis, P., Gonzalez, J., Li, H., Zhang, Z., Franklin, M., & Jordan, M. I. (2015). The missing piece in complex analytics: Low latency, scalable model management and serving with Velox. *Conference on Innovative Data Systems Research (CIDR)*, Asilomar, CA.
- Zhang, Y., Chen, X., Zhou, D., & Jordan, M. I. (2015). Spectral methods meet EM: A provably optimal algorithm for crowdsourcing. In Z. Ghahramani, M. Welling, C. Cortes and N. Lawrence (Eds.), *Advances in Neural Information Processing (NIPS)* 28, Red Hook, NY: Curran Associates.
- Nishihara, R., Jegelka, S., & Jordan, M. I. (2015). On the convergence rate of decomposable submodular function minimization. In Z. Ghahramani, M. Welling, C. Cortes and N. Lawrence (Eds.), *Advances in Neural Information Processing (NIPS)* 28, Red Hook, NY: Curran Associates.
- Jaggi, M., Smith, V., Takac, M., Terhorst, J., Krishnan, S., Hofmann, T., and Jordan, M. I. (2015). Communication-efficient distributed dual coordinate ascent. In Z. Ghahramani, M. Welling, C. Cortes and N. Lawrence (Eds.), *Advances in Neural Information Processing (NIPS)* 28, Red Hook, NY: Curran Associates.
- Pan, X., Jegelka, S., Gonzalez, J., Bradley, J., & Jordan, M. I. (2015). Parallel double greedy submodular maximization. In Z. Ghahramani, M. Welling, C. Cortes and N. Lawrence (Eds.), *Advances in Neural Information Processing (NIPS)* 28, Red Hook, NY: Curran Associates.
- Mozafari, B., Sarkar, P., Franklin, M., Jordan, M. I., & Madden, S. (2015). Scaling a crowd-sourced database. *Proceedings of the 41st International Conference on Very Large Data Bases (VLDB)*, Hawaii, USA.
- Zhang, Y., Wainwright, M., & Jordan, M. I. (2014). Lower bounds on the performance of polynomial-time algorithms for sparse linear regression. *Proceedings of the Conference on Computational Learning Theory (COLT)*. Barcelona, Spain.
- Agarwal, S., Milner, H., Kleiner, A., Mozafari, B., Jordan, M. I., Madden, S., & Stoica, I. (2014). Knowing when you're wrong: Building fast and reliable approximate query processing systems.

Proceedings of the 2014 ACM International Conference on Management of Data (SIGMOD), Snowbird, Utah.

- Bloniarz, A., Talwalkar, A., Terhorst, J., Jordan, M. I., Patterson, D., Yu, B., & Song, Y. (2014). Changepoint analysis for efficient variant calling. *18th Annual International Conference on Research in Computational Molecular Biology (RECOMB)*, Springer Lecture Notes in Bioinformatics.
- Pan, X., Broderick, T., Gonzalez, J., Jegelka, S., & Jordan, M. I. (2014). Optimistic concurrency control for distributed unsupervised learning. In L. Bottou, C. Burges, Z. Ghahramani and M. Welling (Eds.), *Advances in Neural Information Processing (NIPS) 27*, Red Hook, NY: Curran Associates.
- Zhang, Y., Duchi, J., Jordan, M. I., & Wainwright, M. (2014). Information-theoretic lower bounds for distributed statistical estimation with communication constraints. In L. Bottou, C. Burges, Z. Ghahramani and M. Welling (Eds.), *Advances in Neural Information Processing (NIPS) 27*, Red Hook, NY: Curran Associates.
- Duchi, J., Jordan, M. I., & McMahan, B. (2014). Estimation, optimization, and parallelism when data is sparse. In L. Bottou, C. Burges, Z. Ghahramani and M. Welling (Eds.), *Advances in Neural Information Processing (NIPS) 27*, Red Hook, NY: Curran Associates.
- Broderick, T., Boyd, N., Wibisono, A., Wilson, A., & Jordan, M. I. (2014). Streaming variational Bayes. In L. Bottou, C. Burges, Z. Ghahramani and M. Welling (Eds.), *Advances in Neural Information Processing (NIPS) 27*, Red Hook, NY: Curran Associates.
- Duchi, J., Wainwright, M., & Jordan, M. I. (2014). Local privacy and minimax bounds: Sharp rates for probability estimation. In L. Bottou, C. Burges, Z. Ghahramani and M. Welling (Eds.), *Advances in Neural Information Processing (NIPS) 27*, Red Hook, NY: Curran Associates.
- Wauthier, F., Jovic, N., & Jordan, M. I. (2014). A comparative framework for preconditioned Lasso algorithms. In L. Bottou, C. Burges, Z. Ghahramani and M. Welling (Eds.), *Advances in Neural Information Processing (NIPS) 27*, Red Hook, NY: Curran Associates.
- Duchi, J., Jordan, M. I., & Wainwright, M. (2013). Local privacy and statistical minimax rates. *54th Annual Symposium on Foundations of Computer Science (FOCS)*, Berkeley, CA.
- Sparks, E., Talwalkar, A., Smith, V., Kottalam, J., Pan, X., Gonzalez, J., Franklin, M., Jordan, M. I., & Kraska, T., (2013). MLI: An API for distributed machine learning. *IEEE International Conference on Data Mining (ICDM)*, Dallas, TX.
- Mackey, L., Talwalkar, A., Mu, Y., Chang, S-F., & Jordan, M. I. (2013). Distributed low-rank subspace segmentation. *IEEE International Conference on Computer Vision (ICCV)*, Sydney, Australia.
- Kleiner, A., Talwalkar, A., Agarwal, S., Jordan, M. I. & Stoica, I. (2013). A general bootstrap performance diagnostic. *19th ACM Conference on Knowledge Discovery and Data Mining (SIGKDD)*, Chicago, IL.
- Broderick, T., Kulis, B. & Jordan, M. I. (2013). MAD-Bayes: MAP-based asymptotic derivations from Bayes. In S. Dasgupta and D. McAllester (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.

- Wauthier, F., Jordan, M. I. & Jojic, N. (2013). Efficient ranking from pairwise comparisons. In S. Dasgupta and D. McAllester (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Kraska, T., Talwalkar, M., Duchi, J., Griffith, R., Franklin, M., & Jordan, M. I. (2013). MLbase: A distributed machine learning system. *Conference on Innovative Data Systems Research (CIDR)*, Asilomar, CA.
- Paisley, J., Wang, C., Blei, D. & Jordan, M. I. (2013). A nested HDP for hierarchical topic models. *International Conference on Learning Representations (ICLR)*, Scottsdale, AZ.
- Duchi, J., Jordan, M. I., & Wainwright, M. (2013). Privacy aware learning. In P. Bartlett, F. Pereira, L. Bottou and C. Burges (Eds.), *Advances in Neural Information Processing (NIPS) 26*, Red Hook, NY: Curran Associates.
- Jiang, K., Kulis, B. & Jordan, M. I. (2013). Small-variance asymptotics for exponential family Dirichlet process mixture models. In P. Bartlett, F. Pereira, L. Bottou and C. Burges (Eds.), *Advances in Neural Information Processing (NIPS) 26*, Red Hook, NY: Curran Associates.
- Lindsten, F., Jordan, M. I., & Schön, T. (2013). Ancestral sampling for particle Gibbs. In P. Bartlett, F. Pereira, L. Bottou and C. Burges (Eds.), *Advances in Neural Information Processing (NIPS) 26*, Red Hook, NY: Curran Associates.
- Duchi, J., Jordan, M. I., Wainwright, M., & Wibisono, A. (2013). Finite sample convergence rates of zero-order stochastic optimization methods. In P. Bartlett, F. Pereira, L. Bottou and C. Burges (Eds.), *Advances in Neural Information Processing (NIPS) 26*, Red Hook, NY: Curran Associates.
- Chandrasekaran V. & Jordan, M. I. (2013). Computational and statistical tradeoffs via convex relaxation. *Proceedings of the 51st Annual Allerton Conference on Communication, Control, and Computing*, Urbana-Champaign, IL.
- Duchi, J., Jordan, M. I., & Wainwright, M. (2013). Local privacy and statistical minimax rates. *Proceedings of the 51st Annual Allerton Conference on Communication, Control, and Computing*, Urbana-Champaign, IL.
- Wauthier, F., Jojic, N. & Jordan, M. I. (2012). Active spectral clustering via iterative uncertainty reduction. *18th ACM Conference on Knowledge Discovery and Data Mining (SIGKDD)*, Beijing, China.
- Kleiner, A., Talwalkar, A., Sarkar, P. & Jordan, M. I. (2012). The Big Data bootstrap. In J. Langford and J. Pineau (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Paisley, J., Blei, D. & Jordan, M. I. (2012). Variational Bayesian inference with stochastic search. In J. Langford and J. Pineau (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Sarkar, P., Chakrabarti, D. & Jordan, M. I. (2012). Nonparametric link prediction in dynamic networks. In J. Langford and J. Pineau (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.

- Kulis, B. & Jordan, M. I. (2012). Revisiting k-means: New algorithms via Bayesian nonparametrics. In J. Langford and J. Pineau (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Lindsten, F., Schön, T. & Jordan, M. I. (2012). A semiparametric Bayesian approach to Wiener system identification. 16th IFAC Symposium on System Identification (SYSID 2012), Brussels, Belgium.
- Paisley, J., Blei, D. & Jordan, M. I. (2012). Stick-breaking beta processes and the Poisson process. In N. Lawrence and M. Girolami (Eds.), *Proceedings of the Fifteenth Conference on Artificial Intelligence and Statistics (AISTATS)*, Canary Islands.
- Wauthier, F. & Jordan, M. I. (2012). Bayesian bias mitigation for crowdsourcing. In J. Shawe-Taylor, R. Zemel, P. Bartlett and F. Pereira (Eds.), *Advances in Neural Information Processing (NIPS) 25*, Red Hook, NY: Curran Associates.
- Mackey, L., Talwalkar, A. & Jordan, M. I. (2012). Divide-and-conquer matrix factorization. In J. Shawe-Taylor, R. Zemel, P. Bartlett and F. Pereira (Eds.), *Advances in Neural Information Processing (NIPS) 25*, Red Hook, NY: Curran Associates.
- Lukowicz, P., Nanda S., Narayanan, V., Abelson, H., McGuinness, D., & Jordan, M. I. (2012). Qualcomm context-awareness symposium sets research agenda for context-aware smartphones. *IEEE Pervasive Computing*, 11, 76-79.
- Duchi, J., Agarwal, A., Johansson, M., & Jordan, M. I. (2011). Ergodic subgradient descent. *Proceedings of the 46th Annual Allerton Conference on Communication, Control, and Computing*, Urbana-Champaign, IL.
- Liang, P., Jordan, M. I. & Klein, D. (2011). Learning dependency-based compositional semantics. *49th Annual Meeting of the Association for Computational Linguistics (ACL)*, Portland, OR.
- Trushkowsky, B., Bodik, P., Fox, A., Franklin, M., Jordan, M. I. & Patterson, D. (2011). Scaling a distributed storage system under stringent performance requirements. *9th USENIX Conference on File and Storage Technologies (FAST '11)*, San Jose, CA.
- Shyr, A., Darrell, T., Jordan, M. I. & Urtasun, R. (2011). Supervised hierarchical Pitman-Yor process for natural scene segmentation. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, Colorado Springs, CO.
- Bouchard-Côté, A. & Jordan, M. I. (2011). Variational inference over combinatorial spaces. In J. Lafferty, C. Williams, J. Shawe-Taylor and R. Zemel (Eds.), *Advances in Neural Information Processing (NIPS) 24*, Red Hook, NY: Curran Associates.
- Kleiner, A., Rahimi, A. & Jordan, M. I. (2011). Random conic pursuit for semidefinite programming. In J. Lafferty, C. Williams, J. Shawe-Taylor and R. Zemel (Eds.), *Advances in Neural Information Processing (NIPS) 24*, Red Hook, NY: Curran Associates.
- Wauthier, F. & Jordan, M. I. (2011). Heavy-tailed processes for selective shrinkage. In J. Lafferty, C. Williams, J. Shawe-Taylor and R. Zemel (Eds.), *Advances in Neural Information Processing (NIPS) 24*, Red Hook, NY: Curran Associates.

- Adams, R., Ghahramani, Z. & Jordan, M. I. (2011). Tree-structured stick breaking for hierarchical data. In J. Lafferty, C. Williams, J. Shawe-Taylor and R. Zemel (Eds.), *Advances in Neural Information Processing (NIPS) 24*, Red Hook, NY: Curran Associates.
- Wang, M., Sha, F. & Jordan, M. I. (2011). Unsupervised kernel dimension reduction. In J. Lafferty, C. Williams, J. Shawe-Taylor and R. Zemel (Eds.), *Advances in Neural Information Processing (NIPS) 24*, Red Hook, NY: Curran Associates.
- Wauthier, F., Jordan, M. I., & Jojic, N. (2011). Nonparametric combinatorial sequence models. *15th Annual International Conference on Research in Computational Molecular Biology (RECOMB)*, Springer Lecture Notes in Bioinformatics.
- Niu, D., Dy, J. & Jordan, M. I., (2011). Dimensionality reduction for spectral clustering. G. Gordon and D. Dunson (Eds.), *Proceedings of the Fourteenth Conference on Artificial Intelligence and Statistics (AISTATS)*, Ft. Lauderdale, FL.
- Wang, P., Laskey, K. B., Domeniconi, C., & Jordan, M. I. (2011). Nonparametric Bayesian co-clustering ensembles. *SIAM International Conference on Data Mining (SDM)*, Phoenix, AZ.
- Guan, Y., Dy, J., & Jordan, M. I. (2011). A unified probabilistic model for global and local unsupervised feature selection. In L. Getoor and T. Scheffer (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Chowdhury, M., Zaharia, M., Ma, J., Jordan, M. I. & Stoica, I. (2011). Managing data transfers in computer clusters with Orchestra. *ACM SIGCOMM*, Toronto, CA.
- Huang, M.-Y., Mackey, L., Keranen, S., Weber, G., Jordan, M. I., Knowles, D., Biggin, M., & Hamann, B. (2011). Visually relating gene expression and in vivo DNA binding data. *IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM)*, Atlanta, GA.
- Liang, P., Jordan, M. I. & Klein, D. (2010). Learning programs: A hierarchical Bayesian approach. In T. Joachims and J. Fuernkranz (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Duchi, J., Mackey, L. & Jordan, M. I. (2010). On the consistency of ranking algorithms. In T. Joachims and J. Fuernkranz (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Mackey, L., Weiss, D. & Jordan, M. I. (2010). Mixed membership matrix factorization. In T. Joachims and J. Fuernkranz (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Niu, D., Dy, J., & Jordan, M. I. (2010). Multiple non-redundant spectral clustering views. In T. Joachims and J. Fuernkranz (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Ting, D., Huang, L. & Jordan, M. I. (2010). An analysis of the convergence of graph Laplacians. In T. Joachims and J. Fuernkranz (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.

- Xu, W., Huang, L., Fox, A., Patterson, D., & Jordan, M. I. (2010). Detecting large-scale system problems by mining console logs. In T. Joachims and J. Fuernkranz (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Simma, A. & Jordan, M. I. (2010). Modeling events with cascades of Poisson processes. In P. Grunwald and P. Spirtes (Eds.), *Proceedings of the Twenty-Sixth Conference on Uncertainty in Artificial Intelligence (UAI)*, AUAI Press.
- Shyr, A., Urtasun, R., & Jordan, M. I. (2010). Sufficient dimension reduction for visual sequence classification. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, San Francisco, CA.
- Bodik, P., Fox, A., Franklin, M., Jordan, M. I., & Patterson, D. (2010). Characterizing, modeling, and generating workload spikes for stateful services. *First ACM Symposium on Cloud Computing (SOCC)*, Indianapolis, IN.
- Sutton, C. A. & Jordan, M. I., (2010). Inference and learning in networks of queues. In Y. W. Teh and M. Titterton (Eds.), *Proceedings of the Thirteenth Conference on Artificial Intelligence and Statistics (AISTATS)*, Sardinia, Italy.
- Zhang, Z., Dai, G., Wang, D., & Jordan, M. I., (2010). Bayesian generalized kernel models. In Y. W. Teh and M. Titterton (Eds.), *Proceedings of the Thirteenth Conference on Artificial Intelligence and Statistics (AISTATS)*, Sardinia, Italy.
- Zhang, Z., Dai, G., & Jordan, M. I., (2010). Matrix-variate Dirichlet process mixture models. In Y. W. Teh and M. Titterton (Eds.), *Proceedings of the Thirteenth Conference on Artificial Intelligence and Statistics (AISTATS)*, Sardinia, Italy.
- Xu, W., Huang, L., Fox, A., Patterson, D., & Jordan, M. I. (2010). Experience mining Google's production console logs. In *Proceedings of the 2010 Workshop on Managing Systems via Log Analysis and Machine Learning Techniques (SLAML)*, Vancouver, BC.
- Fox, E. B., Sudderth, E., Jordan, M. I., & Willsky, A. S. (2010). Sharing features among dynamical systems with beta processes. In Y. Bengio, D. Schuurmans, J. Lafferty and C. Williams (Eds.), *Advances in Neural Information Processing (NIPS) 23*, Red Hook, NY: Curran Associates.
- Miller, K., Griffiths, T., & Jordan, M. I. (2010). Nonparametric latent feature models for link prediction. In Y. Bengio, D. Schuurmans, J. Lafferty and C. Williams (Eds.), *Advances in Neural Information Processing (NIPS) 23*, Red Hook, NY: Curran Associates.
- Liang, P., Bach, F., Bouchard, G., & Jordan, M. I. (2010). An asymptotic analysis of smooth regularizers. In Y. Bengio, D. Schuurmans, J. Lafferty and C. Williams (Eds.), *Advances in Neural Information Processing (NIPS) 23*, Red Hook, NY: Curran Associates.
- Xu, W., Huang, L., Fox, A., Patterson, D., & Jordan, M. I. (2009). Large-scale system problems detection by mining console logs. In *22nd ACM Symposium on Operating Systems Principles (SOSP)*, Big Sky, MT.
- Liang, P., Jordan, M. I., & Klein, D. (2009). Learning semantic correspondences with less supervision. *47th Annual Meeting of the Association for Computational Linguistics (ACL)*, Singapore.

- Fox, E. B., Sudderth, E., Jordan, M. I., & Willsky, A. S. (2009). Nonparametric Bayesian identification of jump systems with sparse dependencies. *Proceedings of the 15th IFAC Symposium on System Identification*, Saint-Malo, France.
- Yan, D., Huang, L., & Jordan, M. I. (2009). Fast approximate spectral clustering. *15th ACM Conference on Knowledge Discovery and Data Mining (SIGKDD)*, Paris, France.
- Bouchard-Côté, A. & Jordan, M. I. (2009). Optimization of structured mean field objectives. In J. Bilmes and A. Ng (Eds.), *Proceedings of the Twenty-Fifth Conference on Uncertainty in Artificial Intelligence (UAI)*, AUAI Press.
- Liang, P., Klein, D., & Jordan, M. I. (2009). Learning from measurements in exponential families. In L. Bottou and M. Littman (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Sudderth, E. & Jordan, M. I. Shared segmentation of natural scenes using dependent Pitman-Yor processes. (2009). In D. Koller, Y. Bengio, D. Schuurmans and L. Bottou (Eds.), *Advances in Neural Information Processing (NIPS) 22*, Red Hook, NY: Curran Associates.
- Bouchard-Côté, A., Jordan, M. I., & Klein, D. (2009). Efficient inference in phylogenetic InDel trees. In D. Koller, Y. Bengio, D. Schuurmans and L. Bottou (Eds.), *Advances in Neural Information Processing (NIPS) 22*, Red Hook, NY: Curran Associates.
- Obozinski, G., Wainwright, M. J., & Jordan, M. I. (2009). High-dimensional union support recovery in multivariate regression. In D. Koller, Y. Bengio, D. Schuurmans and L. Bottou (Eds.), *Advances in Neural Information Processing (NIPS) 22*, Red Hook, NY: Curran Associates.
- Fox, E. B., Sudderth, E., Jordan, M. I., & Willsky, A. S. (2009). Nonparametric Bayesian learning of switching linear dynamical systems. In D. Koller, Y. Bengio, D. Schuurmans and L. Bottou (Eds.), *Advances in Neural Information Processing (NIPS) 22*, Red Hook, NY: Curran Associates.
- Zhang, Z. & Jordan, M. I. (2009). Posterior consistency of the Silverman g-prior in Bayesian model choice. In D. Koller, Y. Bengio, D. Schuurmans and L. Bottou (Eds.), *Advances in Neural Information Processing (NIPS) 22*, Red Hook, NY: Curran Associates.
- Huang, L., Yan, D., Jordan, M. I., & Taft, N. (2009). Spectral clustering with perturbed data. In D. Koller, Y. Bengio, D. Schuurmans and L. Bottou (Eds.), *Advances in Neural Information Processing (NIPS) 22*, Red Hook, NY: Curran Associates.
- Lacoste-Julien, S., Sha, F., & Jordan, M. I. (2009). DiscLDA: Discriminative learning for dimensionality reduction and classification. In D. Koller, Y. Bengio, D. Schuurmans and L. Bottou (Eds.), *Advances in Neural Information Processing (NIPS) 22*, Red Hook, NY: Curran Associates.
- Xu, W., Huang, L., Fox, A., Patterson, D. and Jordan, M. I. (2009). Online system problem detection by mining patterns of console logs. *IEEE International Conference on Data Mining (ICDM)*, Miami, FL.
- Zhang, Z., Dai, G., & Jordan, M. I. (2009). A flexible and efficient algorithm for regularized Fisher discriminant analysis. In W. Buntine, M. Grobelnik, D. Mladenic, J. Shawe-Taylor (Eds.), *Machine Learning and Knowledge Discovery in Databases: European Conference (ECML PKDD)*, Bled, Slovenia.

- Kleiner, A., Mackey, L., & Jordan, M. I. (2009). Improved automated seismic event extraction Using machine learning. *Proceedings of the American Geophysical Union*, San Francisco, CA.
- Ganapathi, A., Kuno, H., Dayal, U., Wiener, J., Fox, A., Jordan, M. I., and Patterson, D. (2009). Predicting multiple metrics for queries: Better decisions enabled by machine learning. In *25th IEEE International Conference on Data Engineering (ICDE)*, Shanghai, China.
- Zhang, Z., Jordan, M. I., Li, W-J., & Yeung, D-Y. (2009). Coherence functions for multicategory margin-based classification methods. In D. van Dyk and M. Welling (Eds.), *Proceedings of the Twelfth Conference on Artificial Intelligence and Statistics (AISTATS)*, Clearwater Beach, FL.
- Bodik, P., Griffith, R., Sutton, C., Fox, A., Jordan, M. I., and Patterson, D. (2009). Statistical machine learning makes automatic control practical for Internet datacenters. *Workshop on Hot Topics in Cloud Computing (HotCloud)*, San Diego, CA.
- Engelhardt, B., Jordan, M. I., Repo, S., & Brenner, S. (2009). Phylogenetic molecular function annotation. *Journal of Physics: Conference Series*, 180, 012024.
- Zhang, Z. & Jordan, M. I. (2009). Latent variable models for dimensionality reduction. In D. van Dyk and M. Welling (Eds.), *Proceedings of the Twelfth Conference on Artificial Intelligence and Statistics (AISTATS)*, Clearwater Beach, FL.
- Bodik, P., Griffith, R., Sutton, C., Fox, A., Jordan, M. I., and Patterson, D. (2009). Automatic exploration of datacenter performance regimes. *Proceedings of the First Workshop on Automated Control for Datacenters and Clouds (ACDC)*, Barcelona, Spain.
- Miller, K., Griffiths, T. & Jordan, M. I. (2008). The phylogenetic Indian buffet process: A non-exchangeable nonparametric prior for latent features. In D. McAllister (Ed.), *Proceedings of the Twenty-Fourth Conference on Uncertainty in Artificial Intelligence (UAI)*, AUAI Press.
- Liang, P. & Jordan, M. I. (2008). An analysis of generative, discriminative, and pseudolikelihood estimators. In *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Fox, E., Sudderth, E., Jordan, M. I. & Willsky, A. (2008). An HDP-HMM for systems with state persistence. In *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Blum, B., Jordan, M. I., Kim, D., Das, R. Bradley, P., Das, R. & Baker, D. (2008). Feature selection methods for improving protein structure prediction with Rosetta. In J. Platt, D. Koller, Y. Singer, and S. Roweis (Eds.), *Advances in Neural Information Processing (NIPS) 21*, 137–144, Red Hook, NY: Curran Associates.
- Liang, P., Klein, D., & Jordan, M. I. (2008). Agreement-based learning. In J. Platt, D. Koller, Y. Singer, and S. Roweis (Eds.), *Advances in Neural Information Processing (NIPS) 21*, 913–920, Red Hook, NY: Curran Associates.
- Nguyen, X., Wainwright, M., & Jordan, M. I. (2008). Estimating divergence functionals and the likelihood ratio by penalized convex risk minimization. In J. Platt, D. Koller, Y. Singer, and S. Roweis (Eds.), *Advances in Neural Information Processing (NIPS) 21*, 1089–1096, Red Hook, NY: Curran Associates.

- Sankararaman, S., Kimmel, G., Halperin, E. & Jordan, M. I. (2008). On the inference of ancestries in admixed populations. *12th Annual International Conference on Research in Computational Molecular Biology (RECOMB)*, Springer Lecture Notes in Bioinformatics.
- Obozinski, G., Wainwright, M., & Jordan, M. I. (2008). Union support recovery in high-dimensional multivariate regression. *Proceedings of the 43rd Annual Allerton Conference on Communication, Control, and Computing*, Urbana-Champaign, IL.
- Ding, C., Li, T., & Jordan, M. I. (2008). Nonnegative matrix factorization for combinatorial optimization: Spectral clustering, graph matching, and clique finding. *IEEE International Conference on Data Mining*, Pisa, Italy.
- Sutton, C. & Jordan, M. I. (2008). Probabilistic inference in queueing networks. In *Workshop on Tackling Computer Systems Problems with Machine Learning Techniques (SYSML)*, San Diego, CA.
- Xu, W., Huang, L., Fox, A., Patterson, D., & Jordan, M. I. (2008). Mining console logs for large-scale system problem detection. In *Workshop on Tackling Computer Systems Problems with Machine Learning Techniques (SYSML)*, San Diego, CA.
- Thibaux, R. & Jordan, M. I. (2007). Hierarchical beta processes and the Indian buffet process. In M. Meila and X. Shen (Eds.), *Proceedings of the Eleventh Conference on Artificial Intelligence and Statistics (AISTATS)*, Puerto Rico.
- Kivinen, J., Sudderth, E., & Jordan, M. I. (2007). Learning multiscale representations of natural scenes using Dirichlet processes. *IEEE International Conference on Computer Vision (ICCV)*, Rio de Janeiro, Brazil.
- Liang, P., Petrov, S., Klein, D., & Jordan, M. I. (2007). The infinite PCFG using Dirichlet processes. *Empirical Methods in Natural Language Processing (EMNLP)*. Prague, Czech Republic.
- Liang, P., Jordan, M. I., & Taskar, B. (2007). A permutation-augmented sampler for DP mixture models. In Z. Ghahramani (Ed.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Nilsson, J., Sha, F., & Jordan, M. I. (2007). Regression on manifolds using kernel dimension reduction. In Z. Ghahramani (Ed.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Nguyen, X., Wainwright, M., & Jordan, M. I. (2007). Nonparametric estimation of the likelihood ratio and divergence functionals. In *International Symposium on Information Theory (ISIT)*, Nice, France.
- Kivinen, J., Sudderth, E., & Jordan, M. I. (2007). Image denoising with nonparametric hidden Markov trees. *IEEE International Conference on Image Processing (ICIP)*, San Antonio, TX.
- Huang, L., Nguyen, X., Garofalakis, M., Hellerstein, J., Jordan, M. I., Joseph, A., & Taft, N. (2007). Communication-efficient online detection of network-wide anomalies. In *26th Annual IEEE Conference on Computer Communications (INFOCOM)*, Anchorage, AS.

- Huang, L., Nguyen, X., Garofalakis, M., Jordan, M. I., Joseph, A., & Taft, N. (2007). In-network PCA and network anomaly detection. In T. Hofmann, J. Platt and B. Schölkopf (Eds.), *Advances in Neural Information Processing (NIPS) 20*, Cambridge, MA: MIT Press.
- Li, T., Ding, C., & Jordan, M. I. (2007). Solving consensus and semi-supervised clustering problems using nonnegative matrix factorization *IEEE International Conference on Data Mining (ICDM)*, Omaha, NE.
- Bodik, P., Sutton, C., Fox, A., Jordan, M. I., & Patterson, D. (2007). Response-time modeling for resource allocation and energy-informed SLAs. *Workshop on Statistical Learning Techniques for Solving Systems Problems (SYSML)*, Whistler, BC.
- Nguyen, X., Wainwright, M., & Jordan, M. I. (2006). On optimal quantization rules for sequential decision problems. In *International Symposium on Information Theory (ISIT)*, Seattle, WA.
- Zhang, Z., & Jordan, M. I. (2006). Bayesian multicategory support vector machines. In R. Dechter & T. Richardson (Eds.), *Proceedings of the Twenty-Second Conference on Uncertainty in Artificial Intelligence (UAI)*. AUAI Press.
- Xing, E. P., Sohn, K-A., Jordan, M. I., & Teh, Y. W. (2006). Bayesian multi-population haplotype inference via a hierarchical Dirichlet process mixture. In W. Cohen & A. Moore (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Engelhardt, B., Jordan, M. I., & Brenner, S. (2006). A statistical graphical model for predicting protein molecular function. In W. Cohen & A. Moore (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Zheng, A., Jordan, M. I., Liblit, B., Naik, M., & Aiken, A. (2006). Statistical debugging: Simultaneous identification of multiple bugs. In W. Cohen & A. Moore (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Lacoste-Julien, S., Taskar, B., Klein, D. & Jordan, M. I. (2006). Word alignment via quadratic assignment. In J. Bilmes, J. Chu-Carroll, & M. Sanderson (Eds.), *Proceedings of the North American Chapter of the Association for Computational Linguistics Annual Meeting (HLT-NAACL)*.
- Flaherty, P., Jordan, M. I., & Arkin, A. P. (2006). Robust design of biological experiments. In Y. Weiss and B. Schölkopf and J. Platt (Eds.), *Advances in Neural Information Processing (NIPS) 19*, Cambridge, MA: MIT Press.
- Nguyen, X., Wainwright, M., & Jordan, M. I. (2006). Divergence measures, surrogate loss functions and experimental design. In Y. Weiss and B. Schölkopf and J. Platt (Eds.), *Advances in Neural Information Processing (NIPS) 19*, Cambridge, MA: MIT Press.
- Taskar, B., Lacoste-Julien, S., & Jordan, M. I. (2006). Structured prediction via the extragradient method. In Y. Weiss and B. Schölkopf and J. Platt (Eds.), *Advances in Neural Information Processing (NIPS) 19*, Cambridge, MA: MIT Press.
- Bodik, P., Fox, A., Jordan, M. I., Patterson, D., Banerjee, A., Jagannathan, R., Su, T., Tenginkai, S., Turner, B., & Ingalls, J. (2006). Advanced tools for operators at Amazon.com. *Workshop on Hot Topics in Autonomic Computing*, Dublin, Ireland.

- Rosen-Zvi, M., Jordan, M. I., & Yuille, A. (2005). The DLR hierarchy of approximate inference. In M. Chickering, F. Bacchus, & T. Jaakkola (Eds.), *Proceedings of the Twenty-First Conference on Uncertainty in Artificial Intelligence (UAI)*. San Mateo, CA: Morgan Kaufmann.
- Bach, F. R., & Jordan, M. I. (2005). Predictive low-rank decomposition for kernel methods. In S. Dzeroski, L. De Raedt, & S. Wrobel (Eds.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Bodik, P., Friedman, G., Biewald, L., Levine, H., Candea, G., Patel, K., Tolle, G., Hui, J., Fox, A., Jordan, M. I., & Patterson, D. (2005). Combining visualization and statistical analysis to improve operator confidence and efficiency for failure detection and localization. In *International Conference on Autonomic Computing (ICAC)*, Seattle, WA.
- Liblit, B., Naik, M., Zheng, A. X., Aiken, A., & Jordan, M. I. (2005). Scalable statistical bug isolation. In V. Sarkar & M. W. Hall (Eds.), *ACM SIGPLAN 2005 Conference on Programming Language Design and Implementation (PLDI)*.
- Nguyen, X., Wainwright, M., & Jordan, M. I. (2005). On information divergence measures, surrogate loss functions and decentralized hypothesis testing. *Proceedings of the 43rd Annual Allerton Conference on Communication, Control, and Computing*, Urbana-Champaign, IL.
- Teh, Y. W., Jordan, M. I., Beal, M. J., & Blei, D. M. (2005). Sharing clusters among related groups: Hierarchical Dirichlet processes. In L. Saul, Y. Weiss & L. Bottou (Eds.), *Advances in Neural Information Processing (NIPS) 18*, Cambridge, MA: MIT Press.
- Lawrence, N. D. & Jordan, M. I. (2005). Semi-supervised learning via Gaussian processes. In L. Saul, Y. Weiss & L. Bottou (Eds.), *Advances in Neural Information Processing (NIPS) 18*, Cambridge, MA: MIT Press.
- Bach, F. R., Thibaux, R., & Jordan, M. I. (2005). Computing regularization paths for learning multiple kernels. In L. Saul, Y. Weiss & L. Bottou (Eds.), *Advances in Neural Information Processing (NIPS) 18*, Cambridge, MA: MIT Press.
- Bach, F. R., & Jordan, M. I. (2005). Blind one-microphone speech separation: A spectral learning approach. In L. Saul, Y. Weiss & L. Bottou (Eds.), *Advances in Neural Information Processing (NIPS) 18*, Cambridge, MA: MIT Press.
- D'Aspremont, A., El Ghaoui, L., Jordan, M. I., & Lanckriet, G. R. G. (2005). A direct formulation for sparse PCA using semidefinite programming. In L. Saul, Y. Weiss & L. Bottou (Eds.), *Advances in Neural Information Processing (NIPS) 18*, Cambridge, MA: MIT Press.
- Bach, F. R., & Jordan, M. I. (2005). Discriminative training of Hidden Markov Models for multiple pitch tracking. *Proceedings of the International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, IEEE Press.
- Vogel, B., Jordan, M. I., & Wessel, D. (2005). Multi-instrument musical transcription using a dynamic graphical model. *Proceedings of the International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, IEEE Press.

- Teh, Y. W., Seeger, M., & Jordan, M. I. (2005). Semiparametric latent factor models. In R. Cowell and Z. Ghahramani (Eds.), *Proceedings of the Ninth Conference on Artificial Intelligence and Statistics (AISTATS)*, Barbados.
- Fox, A., Kiciman, E., Patterson, D., Jordan, M. I., & Katz, R. (2004). Combining statistical monitoring and predictable recovery for self-management. In D. Garlan, J. Kramer, A. Wolf (Eds.), *ACM SIGSOFT Proceedings of the Workshop on Self-Managed Systems (WOSS)*.
- Bach, F. R., Lanckriet, G. R. G., & Jordan, M. I. (2004). Multiple kernel learning, conic duality, and the SMO algorithm. In C. E. Brodley (Ed.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Nguyen, X., Wainwright, M., & Jordan, M. I. (2004). Decentralized detection and classification using kernel methods. In C. E. Brodley (Ed.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Blei, D. M., & Jordan, M. I. (2004). Variational methods for the Dirichlet process. In C. E. Brodley (Ed.), *International Conference on Machine Learning (ICML)*, New York: ACM Press.
- Xing, E. P., Sharan, R., & Jordan, M. I. (2004). Haplotype modeling via the Dirichlet process. *RECOMB Workshop on Computational Methods for SNPs and Haplotypes*, Springer-Verlag: New York.
- Xing, E. P., Jordan, M. I., & Russell, S. (2004). Graph partition strategies for generalized mean field inference. In M. Chickering & J. Halpern (Eds.), *Proceedings of the Twentieth Conference on Uncertainty in Artificial Intelligence (UAI)*. San Mateo, CA: Morgan Kaufmann.
- Chen, M. Zheng, A. X., Lloyd, J., Jordan, M. I., & Brewer, E. (2004). Failure diagnosis using decision trees. In *International Conference on Autonomic Computing (ICAC)*, New York, NY: IEEE Computer Society.
- Liblit, B., Naik, M., Zheng, A. X., Aiken, A., & Jordan, M. I. (2004). Public deployment of cooperative bug isolation. *Workshop on Remote Analysis and Measurement of Software Systems (RAMSS)*, Edinburgh, UK.
- Lanckriet, G. R. G., Deng, M., Cristianini, N., Jordan, M. I., & Noble, W. S. (2004). Kernel-based data fusion and its application to protein function prediction in yeast. In R. Altman, A. Dunker, L. Hunter, T. Jung, & T. Klein (Eds.), *Pacific Symposium on Biocomputing (PSB)*, Hawaii.
- Bartlett, P., Jordan, M. I., & McAuliffe, J. (2004). Large margin classifiers: convex loss, low noise, and convergence rates. In S. Thrun, L. Saul & B. Schölkopf (Eds.), *Advances in Neural Information Processing (NIPS) 17*, Cambridge, MA: MIT Press.
- Ng, A., Kim, H. J., Jordan, M. I., & Sastry, S. (2004). Autonomous helicopter flight via reinforcement learning. In S. Thrun, L. Saul & B. Schölkopf (Eds.), *Advances in Neural Information Processing (NIPS) 17*, Cambridge, MA: MIT Press.
- Wainwright, M., & Jordan, M. I. (2004). Semidefinite relaxations for approximate inference on graphs with cycles. In S. Thrun, L. Saul & B. Schölkopf (Eds.), *Advances in Neural Information Processing (NIPS) 17*, Cambridge, MA: MIT Press.

- Zheng, A. X., Jordan, M. I., Liblit, B., & Aiken, A. (2004). Statistical debugging of sampled programs. In S. Thrun, L. Saul & B. Schölkopf (Eds.), *Advances in Neural Information Processing (NIPS) 17*, Cambridge, MA: MIT Press.
- Blei, D., Griffiths, T., Jordan, M. I., & Tenenbaum, J. (2004). Hierarchical topic models and the nested Chinese restaurant process. In S. Thrun, L. Saul & B. Schölkopf (Eds.), *Advances in Neural Information Processing (NIPS) 17*, Cambridge, MA: MIT Press.
- Fukumizu, K., Bach, F. R., & Jordan, M. I. (2004). Kernel dimensionality reduction for supervised learning. In S. Thrun, L. Saul & B. Schölkopf (Eds.), *Advances in Neural Information Processing (NIPS) 17*, Cambridge, MA: MIT Press.
- Bach, F. R., & Jordan, M. I. (2004). Learning spectral clustering. In S. Thrun, L. Saul & B. Schölkopf (Eds.), *Advances in Neural Information Processing (NIPS) 17*, Cambridge, MA: MIT Press.
- Nguyen, X., & Jordan, M. I. (2004). On the concentration of expectation and approximate inference in layered Bayesian networks. In S. Thrun, L. Saul & B. Schölkopf (Eds.), *Advances in Neural Information Processing (NIPS) 17*, Cambridge, MA: MIT Press.
- Sinopoli, B., Schenato, L., Franceschetti, M., Poolla, K., Jordan, M. I., & Sastry, S. (2003). Kalman filtering with intermittent observations. *Proceedings of the 42nd IEEE Conference on Decision and Control (CDC)*, Hawaii.
- Wainwright, M., & Jordan, M. I. (2003). Variational inference in graphical models: The view from the marginal polytope. *Proceedings of the 41st Annual Allerton Conference on Communication, Control, and Computing*, Urbana-Champaign, IL.
- Blei, D., Jordan, M. I., & Ng, A. (2003). Hierarchical Bayesian models for applications in information retrieval. In J. M. Bernardo, M. J. Bayarri, J. O. Berger, A. P. Dawid, D. Heckerman, A. F. M. Smith & M. West (Eds.), *Bayesian Statistics 7*, 25–43, Oxford: Oxford University Press.
- Liblit, B., Aiken, A., Zheng, A. X., & Jordan, M. I. (2003). Bug isolation via remote program sampling. *ACM SIGPLAN 2003 Conference on Programming Language Design and Implementation (PLDI)*, San Diego, CA.
- Xing, E. P., Jordan, M. I., & Russell, S. (2003). A generalized mean field algorithm for variational inference in exponential families. In C. Meek and U. Kjærulff (Eds.), *Proceedings of the Nineteenth Conference on Uncertainty in Artificial Intelligence (UAI)*. San Mateo, CA: Morgan Kaufmann.
- Blei, D., & Jordan, M. I. (2003). Modeling annotated data. In E. N. Efthimiadis, S. T. Dumais, D. Hawking, K. Järvelin (Eds.), *Proceedings of the 26th International Conference on Research and Development in Information Retrieval (SIGIR)*. New York, NY: ACM Press.
- Wainwright, M. Jordan, M. I. (2003). Semidefinite relaxations for approximate inference on graphs with cycles. In *International Symposium on Information Theory (ISIT)*, Tokyo, Japan.
- Bach, F. R., & Jordan, M. I. (2003). Finding clusters in independent component analysis. In *Fourth International Symposium on Independent Component Analysis and Blind Source Separation (ICA)*, Tokyo, Japan.

- Xing, E. P., Wu, W., Jordan, M. I., & Karp, R. M., (2003). LOGOS: A modular Bayesian model for *de novo* motif detection. In *IEEE Computer Society Bioinformatics Conference (CSB)*, Palo Alto, CA.
- Liblit, B., Aiken, A., Zheng, A. X., & Jordan, M. I. (2003). Sampling user executions for bug isolation. *Workshop on Remote Analysis and Measurement of Software Systems (RAMSS)*, Portland, OR.
- De Bernardinis, F., Jordan, M. I., & Sangiovanni Vincentelli, A. L. (2003). Support vector machines for analog circuit performance representation. In *Design Automation Conference (DAC)*, San Jose, CA.
- Bach, F. R., & Jordan, M. I. (2003). Kernel ICA. In *Proceedings of the International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, IEEE Press.
- Todorov, E., & Jordan, M. I. (2003). A minimal intervention principle for coordinated movement. In S. Becker, S. Thrun & K. Obermayer (Eds.), *Advances in Neural Information Processing (NIPS) 16*, Cambridge, MA: MIT Press.
- Lanckriet, G. R. G., El Ghaoui, L., & Jordan, M. I. (2003). Robust novelty detection with single-class MPM. In S. Becker, S. Thrun & K. Obermayer (Eds.), *Advances in Neural Information Processing (NIPS) 16*, Cambridge, MA: MIT Press.
- Xing, E. P., Jordan, M. I., Karp, R. M., & Russell, S. (2003). A hierarchical Bayesian Markovian model for motifs in biopolymer sequences. In S. Becker, S. Thrun & K. Obermayer (Eds.), *Advances in Neural Information Processing (NIPS) 16*, Cambridge, MA: MIT Press.
- Fukumizu, K., Bach, F. R., & Jordan, M. I. (2003). Feature extraction in regression with kernel Hilbert spaces. *Workshop on Information-Based Induction Sciences (IBIS)*, Kyoto, Japan.
- Bach, F. R., & Jordan, M. I. (2003). Learning graphical models with Mercer kernels. In S. Becker, S. Thrun & K. Obermayer (Eds.), *Advances in Neural Information Processing (NIPS) 16*, Cambridge, MA: MIT Press.
- Xing, E. P., Ng, A. Y., & Jordan, M. I. (2003). Distance metric learning, with application to clustering with side-information. In S. Becker, S. Thrun & K. Obermayer (Eds.), *Advances in Neural Information Processing (NIPS) 16*, Cambridge, MA: MIT Press.
- Bach, F. R., & Jordan, M. I. (2003). Analyse en composantes indépendantes et réseaux Bayésiens. *Dix-Neuvième Colloque GRETSI sur le Traitement du Signal et des Images*, Paris, France.
- Tatikonda, S., & Jordan, M. I. (2002). Loopy belief propagation and Gibbs measures. *Proceedings of the 40th Annual Allerton Conference on Communication, Control, and Computing*, Urbana-Champaign, IL.
- Micheli, M., & Jordan, M. I. (2002). Random sampling of a continuous-time stochastic dynamical system. *Proceedings of the Fifteenth International Symposium on Mathematical Theory of Networks and Systems*. Notre Dame, IN.
- Bach, F. R., & Jordan, M. I. (2002). Tree-dependent component analysis. In D. Koller & N. Friedman (Eds.), *Proceedings of the Eighteenth Conference on Uncertainty in Artificial Intelligence (UAI)*. San Mateo, CA: Morgan Kaufmann.

- Grate, L. R., Bhattacharyya, C., Jordan, M. I., & Mian, I. S. (2002). Simultaneous relevant feature identification and classification in high-dimensional spaces. *Workshop on Algorithms in Bioinformatics (WABI)*, Rome, Italy.
- Ng, A., Jordan, M. I., & Weiss, Y. (2002). On Spectral Clustering: Analysis and an algorithm. In T. Dietterich, S. Becker & Z. Ghahramani (Eds.), *Advances in Neural Information Processing (NIPS) 14*, Cambridge, MA: MIT Press.
- Lanckriet, G. R. G., El Ghaoui, L., Bhattacharyya, C., & Jordan, M. I. (2002). Minimax probability machine. In T. Dietterich, S. Becker & Z. Ghahramani (Eds.), *Advances in Neural Information Processing (NIPS) 14*, Cambridge, MA: MIT Press.
- Blei, D., Ng, A., & Jordan, M. I. (2002). Latent Dirichlet allocation. In T. Dietterich, S. Becker & Z. Ghahramani (Eds.), *Advances in Neural Information Processing (NIPS) 14*, Cambridge, MA: MIT Press.
- Bach, F. R., & Jordan, M. I. (2002). Thin junction trees. In T. Dietterich, S. Becker & Z. Ghahramani (Eds.), *Advances in Neural Information Processing (NIPS) 14*, Cambridge, MA: MIT Press.
- Lanckriet, G. R. G., Cristianini, N., Bartlett, P., El Ghaoui, L., & Jordan, M. I. (2002). Learning the kernel matrix with semi-definite programming. *International Conference on Machine Learning (ICML)*, San Mateo, CA: Morgan Kaufmann.
- Ng, A., & Jordan, M. I. (2002). On Discriminative vs. Generative classifiers: A comparison of logistic regression and naive Bayes. In T. Dietterich, S. Becker & Z. Ghahramani (Eds.), *Advances in Neural Information Processing (NIPS) 15*, Cambridge, MA: MIT Press.
- Tatikonda, S., & Jordan, M. I. (2002). Loopy belief propagation and Gibbs measures. In D. Koller & N. Friedman (Eds.), *Proceedings of the Eighteenth Conference on Uncertainty in Artificial Intelligence (UAI)*. San Mateo, CA: Morgan Kaufmann.
- Xing, E. P., Jordan, M. I., & Karp, R. M. (2001). Feature selection for high-dimensional genomic microarray data. In *Machine Learning: Proceedings of the Eighteenth International Conference (ICML)*, San Mateo, CA: Morgan Kaufmann.
- Ng, A., Zheng, A., & Jordan, M. I. (2001). Stable algorithms for link analysis. *Proceedings of the 24th International Conference on Research and Development in Information Retrieval (SIGIR)*. New York, NY: ACM Press.
- De Freitas, J., Hoejen-Soerensen, P., Jordan, M. I., & Russell, S. (2001). Variational MCMC. In J. Breese & D. Koller (Eds.), *Proceedings of the Seventeenth Conference on Uncertainty in Artificial Intelligence (UAI)*. San Mateo, CA: Morgan Kaufmann.
- Ng, A., & Jordan, M. I. (2001). Convergence rates of the Voting Gibbs classifier, with application to Bayesian feature selection. In *Machine Learning: Proceedings of the Eighteenth International Conference (ICML)*, San Mateo, CA: Morgan Kaufmann.
- Ng, A., Zheng, A., & Jordan, M. I. (2001). Link analysis, eigenvectors, and stability. *International Joint Conference on Artificial Intelligence (IJCAI)*, Seattle, WA.

- Deshpande, A., Garofalakis, M. N., & Jordan, M. I. (2001). Efficient stepwise selection in decomposable models. In J. Breese & D. Koller (Eds.), *Proceedings of the Seventeenth Conference on Uncertainty in Artificial Intelligence (UAI)*. San Mateo, CA: Morgan Kaufmann.
- Ng, A., & Jordan, M. I. (2000). Approximate inference algorithms for two-layer Bayesian networks. In S. Solla, & T. Leen (Eds.), *Advances in Neural Information Processing Systems (NIPS) 13*. Cambridge, MA: MIT Press.
- Ng, A., & Jordan, M. I. (2000). PEGASUS: A policy search method for large MDPs and POMDPs. In C. Boutilier & M. Goldszmidt (Eds.), *Proceedings of the Sixteenth Conference on Uncertainty in Artificial Intelligence (UAI)*. San Mateo, CA: Morgan Kaufmann.
- Hofmann, T., Puzicha, J., & Jordan, M. I. (1999). Learning from dyadic data. In Kearns, M. S., Solla, S. A., & Cohn, D. (Eds.), *Advances in Neural Information Processing Systems (NIPS) 12*, Cambridge, MA: MIT Press.
- Murphy, K. P., Weiss, Y., & Jordan, M. I. (1999). Loopy belief propagation for approximate inference: An empirical study. In K. B. Laskey & H. Prade (Eds.), *Proceedings of the Fifteenth Conference on Uncertainty in Artificial Intelligence (UAI)*. San Mateo, CA: Morgan Kaufmann.
- Bishop, C. M., Lawrence, N. D., Jaakkola, T. S., & Jordan, M. I. (1998). Approximating posterior distributions in belief networks using mixtures. In Jordan, M. I., Kearns, M. J. & Solla, S. A. (Eds.), *Advances in Neural Information Processing Systems (NIPS) 11*. Cambridge, MA: MIT Press.
- Meila, M., & Jordan, M. I. (1998). Estimating dependency structure as a hidden variable. In Jordan, M. I., Kearns, M. J. & Solla, S. A. (Eds.), *Advances in Neural Information Processing Systems (NIPS) 11*. Cambridge, MA: MIT Press.
- Houde, J. & Jordan, M. I. (1998). Adaptation in speech motor control. In Jordan, M. I., Kearns, M. J. & Solla, S. A. (Eds.), *Advances in Neural Information Processing Systems (NIPS) 11*. Cambridge, MA: MIT Press.
- Lawrence, N. D., Bishop, C. M., Jordan, M. I., & Jaakkola, T. S. (1998). Mixture representations for inference and learning in Boltzmann machines. In G. F. Cooper & S. Moral (Eds.), *Proceedings of the Fourteenth Conference on Uncertainty in Artificial Intelligence (UAI)*. San Mateo, CA: Morgan Kaufmann.
- Jordan, M. I., Ghahramani, Z., & Saul, L. K. (1997). Hidden Markov decision trees. In M. C. Mozer, M. I. Jordan, & T. Petsche (Eds.), *Advances in Neural Information Processing Systems (NIPS) 10*. Cambridge, MA: MIT Press.
- Jaakkola, T., & Jordan, M. I. (1997). Bayesian logistic regression: a variational approach. In D. Madigan & P. Smyth (Eds.), *Proceedings of the 1997 Conference on Artificial Intelligence and Statistics (AISTATS)*, Ft. Lauderdale, FL.
- Saul, L. K., & Jordan, M. I. (1997). Mixed memory Markov models. In D. Madigan & P. Smyth (Eds.), *Proceedings of the 1997 Conference on Artificial Intelligence and Statistics (AISTATS)*, Ft. Lauderdale, FL.

- Meila, M., & Jordan, M. I. (1997). An objective function for belief net triangulation. In D. Madigan & P. Smyth (Eds.), *Proceedings of the 1997 Conference on Artificial Intelligence and Statistics (AISTATS)*, Ft. Lauderdale, FL.
- Saul, L. K., & Jordan, M. I. (1997). A variational principle for model-based interpolation. In M. C. Mozer, M. I. Jordan, & T. Petsche (Eds.), *Advances in Neural Information Processing Systems (NIPS) 10*. Cambridge, MA: MIT Press.
- Meila, M., & Jordan, M. I. (1997). Optimal triangulation with continuous cost functions. In M. C. Mozer, M. I. Jordan, & T. Petsche (Eds.), *Advances in Neural Information Processing Systems (NIPS) 10*. Cambridge, MA: MIT Press.
- Jaakkola, T., & Jordan, M. I. (1997). Recursive algorithms for approximating probabilities in graphical models. In M. C. Mozer, M. I. Jordan, & T. Petsche (Eds.), *Advances in Neural Processing Systems (NIPS) 10*. Cambridge, MA: MIT Press.
- Saul, L. K., & Jordan, M. I. (1996). Exploiting tractable substructures in intractable networks. In D. S. Touretzky, M. C. Mozer, & M. E. Hasselmo (Eds.), *Advances in Neural Information Processing Systems (NIPS) 9*. Cambridge, MA: MIT Press.
- Ghahramani, Z., & Jordan, M. I. (1996). Factorial Hidden Markov models. In D. S. Touretzky, M. C. Mozer, & M. E. Hasselmo (Eds.), *Advances in Neural Information Processing Systems (NIPS) 9*. Cambridge, MA: MIT Press.
- Jaakkola, T., Saul, L. K., & Jordan, M. I. (1996). Fast learning by bounding likelihoods in sigmoid belief networks. In D. S. Touretzky, M. C. Mozer, & M. E. Hasselmo (Eds.), *Advances in Neural Information Processing Systems (NIPS) 9*. Cambridge, MA: MIT Press.
- Sabes, P. N., & Jordan, M. I. (1996). Reinforcement learning by probability matching. In D. S. Touretzky, M. C. Mozer, & M. E. Hasselmo (Eds.), *Advances in Neural Information Processing Systems (NIPS) 9*. Cambridge, MA: MIT Press.
- Meila, M., & Jordan, M. I. (1996). Learning fine motion by Markov mixtures of experts. In D. S. Touretzky, M. C. Mozer, & M. E. Hasselmo (Eds.), *Advances in Neural Information Processing Systems (NIPS) 9*. Cambridge, MA: MIT Press.
- Jaakkola, T., & Jordan, M. I. (1996). Computing upper and lower bounds on likelihoods in intractable networks. In E. Horvitz (Ed.), *Workshop on Uncertainty in Artificial Intelligence (UAI)*, Portland, Oregon.
- Jaakkola, T., Singh, S. P., & Jordan, M. I. (1995). Reinforcement learning algorithm for partially observable Markov decision problems. In G. Tesauro, D. S. Touretzky & T. K. Leen, (Eds.), *Advances in Neural Information Processing Systems (NIPS) 8*. Cambridge, MA: MIT Press.
- Saul, L. K., & Jordan, M. I. (1995). Boltzmann chains and hidden Markov models. In G. Tesauro, D. S. Touretzky & T. K. Leen, (Eds.), *Advances in Neural Information Processing Systems (NIPS) 8*. Cambridge, MA: MIT Press.
- Fun, W., & Jordan, M. I. (1995). The moving basin: Effective action-search in adaptive control. In *Proceedings of the World Conference on Neural Networks (WCNN)*. Washington, DC.

- Singh, S. P., Jaakkola, T., & Jordan, M. I. (1995). Reinforcement learning with soft state aggregation. In G. Tesauro, D. S. Touretzky & T. K. Leen, (Eds.), *Advances in Neural Information Processing Systems (NIPS) 8*. Cambridge, MA: MIT Press.
- Cohn, D., Ghahramani, Z., & Jordan, M. I. (1995). Active learning with statistical models. In G. Tesauro, D. S. Touretzky & T. K. Leen, (Eds.), *Advances in Neural Information Processing Systems (NIPS) 8*. Cambridge, MA: MIT Press.
- Xu, L., Jordan, M. I., & Hinton, G. E. (1995). An alternative model for mixtures of experts. In G. Tesauro, D. S. Touretzky & T. K. Leen, (Eds.), *Advances in Neural Information Processing Systems (NIPS) 8*. Cambridge, MA: MIT Press.
- Wolpert, D. M., Ghahramani, Z., & Jordan, M. I. (1995). Neural forward dynamic models in human motor control: Psychophysical evidence. In G. Tesauro, D. S. Touretzky & T. K. Leen, (Eds.), *Advances in Neural Information Processing Systems (NIPS) 8*. Cambridge, MA: MIT Press.
- Ghahramani, Z., Wolpert, D. M., & Jordan, M. I. (1995). Computational structure of coordinate transformations: A generalization study. In G. Tesauro, D. S. Touretzky & T. K. Leen, (Eds.), *Advances in Neural Information Processing Systems (NIPS) 8*. Cambridge, MA: MIT Press.
- Ghahramani, Z., & Jordan, M. I. (1994). Supervised learning from incomplete data via the EM approach. In Cowan, J., Tesauro, G., & Alspector, J., (Eds.), *Neural Information Processing Systems 6*. San Mateo, CA: Morgan Kaufmann.
- Jaakkola, T., Jordan, M. I., & Singh, S. P. (1994). Convergence of stochastic iterative dynamic programming algorithms. In Cowan, J., Tesauro, G., & Alspector, J., (Eds.), *Neural Information Processing Systems 6*. San Mateo, CA: Morgan Kaufmann.
- Xu, L., & Jordan, M. I. (1994). Theoretical and experimental studies on convergence properties of EM algorithm based on finite Gaussian mixtures. In *Proceedings of the 1994 International Symposium on Artificial Neural Networks*, Tainan, Taiwan, pp. 380–385.
- Xu, L., Jordan, M. I., & Hinton, G. E. (1994). A modified gating network for the mixtures of experts architecture. In *Proceedings of the 1994 World Congress on Neural Networks (WCNN)*, San Diego, CA, pp. 405–410.
- Jordan, M. I. (1994). A statistical approach to decision tree modeling. In M. Warmuth (Ed.), *Proceedings of the Seventh Annual ACM Conference on Computational Learning Theory (COLT)*. New York: ACM Press.
- Singh, S. P., Jaakkola, T., & Jordan, M. I. (1994). Learning without state estimation in partially observable Markovian decision processes. In *Machine Learning: Proceedings of the Eleventh International Conference (ICML)*, San Mateo, CA: Morgan Kaufmann. pp. 284–292.
- Bavelier, D. & Jordan, M. I. (1993). A dynamical model of priming and repetition blindness. In Hanson, S. J., Cowan, J. D., & Giles, C. L., (Eds.), *Advances in Neural Information Processing Systems (NIPS) 6*. San Mateo, CA: Morgan Kaufmann.
- Xu, L., & Jordan, M. (1993). EM learning of a generalized finite mixture model for combining multiple classifiers. *Proceedings of the World Conference on Neural Networks (WCNN)*. Portland, OR, pp. 431–434.

- Xu, L., & Jordan, M. (1993). Unsupervised learning by an EM algorithm based on finite mixture of Gaussians. *Proceedings of the World Conference on Neural Networks (WCNN)*. Portland, OR, pp. 227–230.
- Jordan, M. I. & Jacobs, R. A. (1993). Supervised learning and divide-and-conquer: A statistical approach. In P. E. Utgoff, (Ed.), *Machine Learning: Proceedings of the Tenth International Workshop (ICML)*. San Mateo, CA: Morgan Kaufmann.
- Jordan, M. I. & Jacobs, R. A. (1992). Hierarchies of adaptive experts. In J. Moody, S. Hanson, & R. Lippmann (Eds.), *Advances in Neural Information Processing Systems (NIPS) 5*. San Mateo, CA: Morgan Kaufmann. pp. 985–993.
- Hirayama, M., Vatikiotis-Bateson, E., Kawato, M., & Jordan, M. I. (1992). Forward dynamics modeling of speech motor control using physiological data. In J. Moody, S. Hanson, & R. Lippmann (Eds.), *Advances in Neural Information Processing Systems (NIPS) 5*. San Mateo, CA: Morgan Kaufmann. pp. 191–199.
- Hirayama, M., Vatikiotis-Bateson, E., Kawato, M., & Jordan, M. I. (1991). Speech motor control model using electromyography. *INCN Conference on Speech Communications*, 39–46.
- Jordan, M. I. & Rumelhart, D. E. (1991). Internal world models and supervised learning. In L. Birnbaum and G. Collins, (Eds.), *Machine Learning: Proceedings of the Eighth International Workshop (ICML)*. San Mateo, CA: Morgan Kaufmann. pp. 70–75.
- Jacobs, R. A. & Jordan, M. I. (1991). A competitive modular connectionist architecture. In D. Touretzky (Ed.), *Advances in Neural Information Processing Systems (NIPS) 4*. San Mateo, CA: Morgan Kaufmann. pp. 767–773.
- Jacobs, R. A. & Jordan, M. I. (1991). A modular connectionist architecture for learning piecewise control strategies. *Proceedings of the 1991 American Control Conference (ACC)*, Boston, MA. pp. 343–351.
- Mazzoni P., Andersen R. A., & Jordan M. I. (1990). AR-P learning applied to a network model of cortical area 7a. *Proceedings of the International Joint Conference On Neural Networks (IJCNN)*, San Diego, CA, pp. 373–379.
- Jordan, M. I. & Jacobs, R. A. (1990). Learning to control an unstable system with forward modeling. In D. Touretzky (Ed.), *Advances in Neural Information Processing Systems (NIPS) 3*. San Mateo, CA: Morgan Kaufmann. pp. 324–331.
- Jordan, M. I. (1986). Attractor dynamics and parallelism in a connectionist sequential machine. *Proceedings of the Eighth Annual Conference of the Cognitive Science Society*. Englewood Cliffs, NJ: Erlbaum. pp. 531–546. [Reprinted in IEEE Tutorials Series, New York: IEEE Publishing Services, 1990].

BOOK CHAPTERS

- Fox, E. B. & Jordan, M. I. (2014). Mixed membership models for time series. In E. M. Airoldi, D. Blei, E. A. Erosheva, and S. E. Fienberg (Eds.), *Handbook of Mixed Membership Models and Their Applications*, Chapman & Hall/CRC.

- Mackey, L., Weiss, D., & Jordan, M. I. (2014). Mixed membership matrix factorization. In E. M. Airoldi, D. Blei, E. A. Erosheva, and S. E. Fienberg (Eds.), *Handbook of Mixed Membership Models and Their Applications*, Chapman & Hall/CRC.
- Paisley, J., Blei, D. & Jordan, M. I. (2014). Bayesian nonnegative matrix factorization with stochastic variational inference. In E. M. Airoldi, D. Blei, E. A. Erosheva, and S. E. Fienberg (Eds.), *Handbook of Mixed Membership Models and Their Applications*, Chapman & Hall/CRC.
- Jordan, M. I. (2010). Hierarchical models, nested models and completely random measures. In M.-H. Chen, D. Dey, P. Müller, D. Sun, and K. Ye (Eds.), *Frontiers of Statistical Decision Making and Bayesian Analysis: In Honor of James O. Berger*, New York: Springer.
- Jordan, M. I. (2010). Bayesian nonparametric learning: Expressive priors for intelligent systems. In R. Dechter, H. Geffner, and J. Halpern (Eds.), *Heuristics, Probability and Causality: A Tribute to Judea Pearl*, College Publications.
- Teh, Y. W. & Jordan, M. I. (2010). Hierarchical Bayesian nonparametric models with applications. In N. Hjort, C. Holmes, P. Müller, & S. Walker (Eds.), *Bayesian Nonparametrics: Principles and Practice*, Cambridge, UK: Cambridge University Press.
- Liang, P., Jordan, M. I. & Klein, D. (2010). Probabilistic grammars and hierarchical Dirichlet processes. In T. O'Hagan & M. West (Eds.), *The Handbook of Applied Bayesian Analysis*, Oxford, UK: Oxford University Press.
- Bach, F. R., & Jordan, M. I. (2008). Spectral clustering for speech separation. In J. Keshet & S. Bengio (Eds.), *Automatic Speech and Speaker Recognition: Large Margin and Kernel Methods*, New York: John Wiley.
- Wainwright, M., & Jordan, M. I. (2005). A variational principle for graphical models. In S. Haykin, J. Principe, T. Sejnowski & J. McWhirter (Eds.), *New Directions in Statistical Signal Processing: From Systems to Brain*, Cambridge, MA: MIT Press.
- Lawrence, N. D. & Jordan, M. I. (2005). Gaussian processes and the null-category noise model. In O. Chapelle, A. Zien, and B. Schölkopf (Eds.), *Semi-Supervised Learning*, Cambridge, MA: MIT Press.
- Lawrence, N. D., Platt, J. C. & Jordan, M. I. (2005). Extensions of the informative vector machine. In J. Winkler and N. D. Lawrence and M. Niranjan (Eds.), *Proceedings of the Sheffield Machine Learning Workshop*, Lecture Notes in Computer Science, New York: Springer.
- Lanckriet, G. R. G., Cristianini, N., Jordan, M. I., & Noble, W. S. (2003). Kernel-based integration of genomic data using semidefinite programming. In B. Schölkopf, K. Tsuda & J-P. Vert (Eds.), *Kernel Methods in Computational Biology*, Cambridge, MA: MIT Press.
- Jordan, M. I., & Weiss, Y. (2002). Graphical models: Probabilistic inference. In M. Arbib (Ed.), *The Handbook of Brain Theory and Neural Networks, 2nd edition*. Cambridge, MA: MIT Press.
- Jordan, M. I., & Jacobs, R. A. (2002). Learning in modular and hierarchical systems. In M. Arbib (Ed.), *The Handbook of Brain Theory and Neural Networks, 2nd edition*. Cambridge, MA: MIT Press.

- Jordan, M. I. (2001). Foreword. In D. Saad & M. Oppor (Eds.), *Advanced Mean Field Theory Methods—Theory and Practice*. Cambridge, MA: MIT Press.
- Jaakkola, T., & Jordan, M. I. (1999). Variational methods and the QMR-DT database. In C. M. Bishop (Ed.), *Neural Networks and Machine Learning*. Berlin: Springer-Verlag.
- Jordan, M. I., & Wolpert, D. M. (1999). Computational motor control. In M. Gazzaniga (Ed.), *The Cognitive Neurosciences, 2nd edition*. Cambridge, MA: MIT Press.
- Jordan, M. I., & Russell, S. (1999). Computational intelligence. In R. A. Wilson & F. C. Keil (Eds.), *The MIT Encyclopedia of the Cognitive Sciences*. Cambridge, MA: MIT Press.
- Jordan, M. I. (1999). Recurrent networks. In R. A. Wilson & F. C. Keil (Eds.), *The MIT Encyclopedia of the Cognitive Sciences*. Cambridge, MA: MIT Press.
- Jordan, M. I. (1999). Neural networks. In R. A. Wilson & F. C. Keil (Eds.), *The MIT Encyclopedia of the Cognitive Sciences*. Cambridge, MA: MIT Press.
- Jaakkola, T. S., & Jordan, M. I. (1998). Improving the mean field approximation via the use of mixture distributions. In M. I. Jordan (Ed.), *Learning in Graphical Models*. Dordrecht: Kluwer Academic Press.
- Saul, L. K., & Jordan, M. I. (1998). A mean field learning algorithm for unsupervised neural networks. In M. I. Jordan (Ed.), *Learning in Graphical Models*. Dordrecht: Kluwer Academic Press.
- Jordan, M. I., Ghahramani, Z., Jaakkola, T. S., & Saul, L. K. (1998). An introduction to variational methods for graphical models. In M. I. Jordan (Ed.), *Learning in Graphical Models*. Cambridge: MIT Press.
- Ghahramani, Z., & Jordan, M. I. (1997). Mixture models for learning from incomplete data. In Greiner, R., Petsche, T., & Hanson, S. J. (Eds.), *Computational Learning Theory and Natural Learning Systems*. Cambridge, MA: MIT Press.
- Meila, M., & Jordan, M. I. (1997). Markov mixtures of experts. In Murray-Smith, R., & Johansen, T. A. (Eds.), *Multiple Model Approaches to Modelling and Control*. London: Taylor and Francis.
- Cohn, D., Ghahramani, Z., & Jordan, M. I. (1997). Active learning with statistical models. In Murray-Smith, R., & Johansen, T. A. (Eds.), *Multiple Model Approaches to Modelling and Control*. London: Taylor and Francis.
- Jordan, M. I., & Bishop, C. (1997). Neural networks. In Tucker, A. B. (Ed.), *CRC Handbook of Computer Science*, Boca Raton, FL: CRC Press.
- Ghahramani, Z., Wolpert, D. M., & Jordan, M. I. (1997). Computational models of sensorimotor organization. In P. Morasso & V. Sanguineti (Eds.), *Self-Organization Computational Maps and Motor Control*. Amsterdam: North-Holland.
- Jordan, M. I. (1997). Serial order: A parallel, distributed processing approach. In J. W. Donahoe & V. P. Dorsel, (Eds.), *Neural-network Models of Cognition: Biobehavioral Foundations*. Amsterdam: Elsevier Science Press.

- Jordan, M. I. (1996). Computational aspects of motor control and motor learning. In H. Heuer & S. Keele (Eds.), *Handbook of Perception and Action: Motor Skills*. New York: Academic Press.
- Jordan, M. I., & Jacobs, R. A. (1995). Learning in modular and hierarchical systems. In M. Arbib (Ed.), *The Handbook of Brain Theory and Neural Networks*. Cambridge, MA: MIT Press.
- Perkell, J. S., Matthies, M. L., Svirsky, M. A., & Jordan, M. I. (1995). Goal-based speech motor control: A theoretical framework and some preliminary data. In D. A. Robin, K. M. Yorkston, & D. R. Beukelman (Eds.), *Disorders of Motor Speech: Assessment, Treatment, and Clinical Characterization*, Baltimore, MD: Brookes Publishing Co.
- Jordan, M. I. (1994). Computational motor control. In M. Gazzaniga (Ed.), *The Cognitive Neurosciences*. Cambridge, MA: MIT Press.
- Barto, A. G. & Jordan, M. I. (1992). Gradient following without backpropagation in layered networks. In S. M. Kosslyn and R. A. Andersen (Eds.), *Readings in Cognitive Neuroscience*. Cambridge, MA: MIT Press. [Originally appeared in *Proceedings of the IEEE First Annual International Conference on Neural Networks*. New York: IEEE Publishing Services, 1987].
- Jordan, M. I. (1992). Supervised learning and excess degrees of freedom. In P. Mehra, & B. Wah, (Eds.), *Artificial Neural Networks: Concepts and Theory*. Los Alamitos, CA: IEEE Computer Society Press.
- White, D. A. & Jordan, M. I. (1992). Optimal control: A foundation for intelligent control. In D. A. White, & D. A. Sofge (Eds.), *Handbook of Intelligent Control*. Amsterdam: Van Nostrand.
- Jordan, M. I. (1992). Constraints on underspecified target trajectories. In P. Dario, G. Sandini, & P. Aebischer, (Eds.), *Robots and Biological Systems: Toward a New Bionics*. Heidelberg: Springer-Verlag.
- Jordan, M. I. & Jacobs, R. A. (1991). Modularity, supervised learning, and unsupervised learning. In S. Davis (Ed.), *Connectionism: Theory and practice*. Oxford: Oxford University Press.
- Jordan, M. I. (1990). Motor learning and the degrees of freedom problem. *Attention and Performance, XIII*, 796–836.
- Jordan, M. I. (1990). Learning inverse mappings with forward models. In K. S. Narendra (Ed.), *Proceedings of the Sixth Yale Workshop on Adaptive and Learning Systems*. New York: Plenum Press.
- Jordan, M. I. & Rosenbaum, D. A. (1989). Action. In M. I. Posner (Ed.), *Foundations of Cognitive Science*. Cambridge, MA: MIT Press.
- Jordan, M. I. (1986). An introduction to linear algebra in parallel, distributed processing. In D. E. Rumelhart and J. L. McClelland, (Eds.), *Parallel Distributed Processing: Explorations in the Microstructure of Cognition*. Cambridge, MA: MIT Press.

BOOKS

- Domeniconi, C., & Jordan, M. I. (2001). *Discorsi sulle Reti Neurali e l'Apprendimento*. Milan: Franco Angeli Editore.

- Jordan, M. I., LeCun, Y. & Solla, S. A. (Eds.). (2001). *Advances in Neural Information Processing Systems, Proceedings of the First Twelve Conferences on CD-ROM*, Cambridge MA: MIT Press.
- Jordan, M. I., & Sejnowski, T. J. (Eds.). (2001). *Graphical Models: Foundations of Neural Computation*. Cambridge MA: MIT Press.
- Jordan, M. I. (Ed.). (1999). *Learning in Graphical Models*, Cambridge, MA: MIT Press.
- Jordan, M. I., Kearns, M. J. & Solla, S. A. (Eds.). (1998). *Advances in Neural Information Processing Systems 10*, Cambridge MA: MIT Press.
- Mozer, M. C., Jordan, M. I., & Petsche, T. (Eds.). (1997). *Advances in Neural Information Processing Systems 9*, Cambridge MA: MIT Press.