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Positions

- **President**, *Mohamed bin Zayed University of Artificial Intelligence*. (January, 2021 –)
- **Associate Department Head of Research**, Machine Learning Department, *Carnegie Mellon University*. (July, 2016 –)
- **Founding Director**, Center for Machine Learning and Health, *Carnegie Mellon University & University of Pittsburgh Medical Center*. (March, 2015 – July, 2016)
- **Professor**, Machine Learning Department & Language Technology Institute & Computer Science Department, School of Computer Science, *Carnegie Mellon University*. (June, 2014 –)
- **Associate Professor with tenure**, Machine Learning Department & Language Technology Institute & Computer Science Department, School of Computer Science, *Carnegie Mellon University*. (June, 2011 – June 2014)
- **Visiting Associate Professor**, Department of Statistics, *Stanford University*. (Aug, 2010 – Aug 2011)
- **Visiting Research Professor**, *Facebook Inc.*. (Aug, 2010 – Aug 2011)
- **Associate Professor**, Machine Learning Department & Language Technology Institute & Computer Science Department, School of Computer Science, *Carnegie Mellon University*. (June, 2009 – 2011)
- **Assistant Professor**, Machine Learning Department & Language Technology Institute & Computer Science Department, School of Computer Science, *Carnegie Mellon University*. (September 1, 2004 – June, 2009)

Entrepreneurship

- **Founder, Chief Scientist, Chairman**, *Petuum Inc.*. (2016 –)
  Petuum, Inc is a US-based startup company whose mission is to democratize the owning and using of artificial intelligence (AI) systems and solutions, and make even the most advanced AI technology accessible and affordable for everyone who needs it. Petuum aims to turn advanced AI technologies from a rare and precious resource controlled only by a few organizations, into a daily productivity tool that is as commonplace as word processors and spreadsheet software. With Petuum, individuals, small businesses, startups, educational institutions and non-profits will be empowered to create and customize AI solutions easily and in their own hands. In 2016 and 2017, Petuum was named by CB Insight as one of the AI 100 around the world. And in November 2017, Petuum closed a $93M series B financing led by SoftBank.

Education

- **University of California, Berkeley**, Ph.D. in Computer Science (1999–2004).
  Research advisors: Profs. Richard Karp, Michael Jordan and Stuart Russell
- **Rutgers University**, Ph.D. in Molecular Biology and Biochemistry (1994–1999).
  Research advisor: Prof. Chung S. Yang
- **Rutgers University**, M.Sc. in Computer Science (1996–1998).
  Research advisor: Prof. Casimir Kulikowski
- **Tsinghua University**, B.Sc. in Physics (1988–1993).
  Research advisor: Prof. Jun Zhao

Awards and Recognitions

- Carnegie Science Award, 2019
- Fellow, IEEE, 2018.
- Fellow, Association of Advancement of Artificial Intelligence (AAAI), 2016.
- Member, Board of the International Machine Learning Society, 2015 - .
- Member of the DARPA Information Science and Technology (ISAT) Advisory Group, 2011-2014.
- IBM Open Collaborative Research Faculty Award, IBM, 2012-2014.
- Young Investigator Award, United States Air Force Office of Scientific Research, 2010-2015.
- Alfred P. Sloan Research Fellowship in Computer Science, 2008-2010.
- Career Award, National Science Foundation, 2006-2011.
- (Advisor of) KDD best Ph.D. Dissertation Award, 2012 (Winner), 2014 (Winner), 2015 (Runner up).
- Outstanding Long Paper, Association for Computational Linguistics (ACL), 2016.
- Best Paper Award, ACM Symposium on Cloud Computing (SoCC), 2015.
- Honorable Mentioning, Association for Computational Linguistics (ACL), 2015.
- Runner-up Best Paper Award, Conference on Empirical Methods on Natural Language Processing (EMNLP), 2014.
- Best Paper Award, The 1st IEEE Workshop on Large Scale Visual Commerce, 2013.
- Best Paper Award, International Conference on Intelligence Systems for Molecular Biology (ISMB), 2011.
- Best Paper Award, Association for Computational Linguistics (ACL), 2009.
- Best Paper Award, SIAM International Conference on Data Mining (SDM), 2007.
- John Van Ryzin Award for best paper, International Biometric Society-ENAR Annual Meetings, 2006.
- Runner-up Best Student Paper Award, 18th Conference on Uncertainty in Artificial Intelligence (UAI), 2003.
- Regents Fellowship, UC Berkeley, 1999.
- *Anthony Lu* Best Paper Award, Rutgers University, 1999.

Principal External Grants and Awards

1. Commonwealth of Pennsylvania Tobacco Settlement Grant (co-PI): “Computational Analysis of Integrated Multivariate Protein Data”, Sep 1, 2004 – Jun 30, 2006, $237,443.

2. Glaxo-Smith-Kline (PI): Gift for Discretionary Project, Nov 1, 2005 – Dec 31, 2015, $ 150,000.

3. NSF CCF-0523757 (PI): ”Nonparametric Bayesian Models for Genetic Variations and Their Associations to Diseases and Population Demography”, Aug 1, 2005 – Jul 31, 2008, $ 300,000.

4. NSF DBI-0546594, Career Award (PI): ”CAREER: Uncovering the Process and Mechanism of Regulatory Evolution – Novel Statistical Models and Computational Algorithms for Evolutionary Genomics”, Mar 1, 2006 – Feb 28, 2011, $1,312,321.

5. NIH 1 R01 GM078622-01 (co-PI, with R. Murphy and W. Cohen): ”Probabilistic Modeling of Information from Images and Text in Online Journals”, Jul 1, 2006 – Jun 30, 2009, $791,891.

6. NSF DBI- 0640543 (PI, with co-PI Christos Faloutsos): ”Indexing, Mining and Modeling Spatio-Temporal Patterns of Gene Expressions”, Aug 15, 2007 – July 30, 2010, $1,331,995.

7. NSF IIS-0713379 (PI): ”Novel Statistical Models and Algorithms for Network Modeling, Mining, and Reverse Engineering”, Sep 15, 2007 – Aug 30, 2010, $429,000.

8. DARPA NBCH1080007 (PI): ”Computer Science Futures II-Engaging Young Scholars in Computer Science”, July 1, 2008 – July 1, 2010, $360,000.

9. Alfred P. Sloan Foundation: "2008 Sloan Research Fellowship in Computer Science", Sep 16, 2008 – Sep 15, 2010, $50,000.

10. ONR N000140910758 (PI): "Toward a Unified Theory of Real-time Dynamic Network Analysis", Apr 1, 2009 – Mar 31, 2012, $630,207.

11. NIH 1R01GM087694 (PI): "Genome-Transcriptome-Phenome-Wide Association: a new paradigm for association studies of complex diseases", May 15, 2009 – Mar 31, 2015, $3,169,089.

12. NIH 1RC2HL101487-01 (co-PI): "Linking Genetics, Genomics and Phenomics to better understand Asthma Severity", Sep 1, 2009 – Aug 31, 2011, $214,520.

13. AFOSR FA95501010247 (PI): "SocioScape: Real-time Analysis and Mining of Dynamic Heterogeneous Networks in Complex Socio-Cultural Systems", June 1, 2010 – June 1, 2015, $600,000.

14. NIH 1R01GM093156 (PI): "Time/Space-Varying Networks of Molecular Interactions: A New Paradigm for Studying Dynamic Biological Regulation and Pathways", July 1, 2010 – Jun 30, 2015, $2,237,288.

15. NSF IIS-1111142 (PI, with Scott Kiesling): "Collaborative Research: Discovering and Exploiting Latent Communities in Social Media", Aug 1, 2011 – July 31, 2014, $547,805.

16. NSF IIS-1115313 (PI, with Fei-Fei Li): "Collaborative Research: Using Large-Scale Image Data for Online Social Media Analysis", Sep 15, 2011 – Aug 30, 2014, $204,202.

17. IBM (PI): Open Collaborative Faculty Award, an IBM grant challenge. Apr 2012 – Apr, 2014, $300,000.

18. NSF RI-1218749 (PI, with Le Song): "Collaborative Research: Efficient, Nonparametric and Local-Minimum-Free Latent Variable Models: with application to large-scale computer vision and genomics", Sep 15, 2012 – Aug 30, 2015, $200,000.

19. DARPA FA87501220324 (with Jeff Schneider): "Machine Learning Algorithms for Statistical Patterns in Large Data Sets", 07/01/2014 - 06/30/2017.

20. ONR N000141410684 (PI): "A Unified Framework for Predictive Latent Space Learning", 07/01/2014 - 06/30/2017.

21. NSF IIS1447676 (PI, with Sinead Williamson): "BIGDATA: Collaborative Research: Theory and Algorithms for Parallel Probabilistic Inference with Big Data, via Big Model, in Realistic Distributed Computing Environments", 09/01/2014 - 08/31/2018.

22. NIH R01GM114311 (PI): "Toward PanOmic and Personalized Association Study of Complex Diseases - A New Statistical and Computational Paradigm for Personalized Medicine", Sep, 2015 – Sep, 2019.

23. NSF IIS1563887 (co-PI, with Barnabas Poczos): "RI: III: Medium: Scalable Machine Learning for Automating Scientific Discovery in Astrophysics", 06/15/2016 - 5/31/2020.

24. NSF IIS1617583 (PI): "III: RI: Small: A New Approach to Latent Space Learning with Diversity-Inducing Mutual Angular Regularization, with Applications to Healthcare Data Analytics", 09/01/2016 - 8/31/2021.

25. NSF CCF1629559 (PI, with Garth Gibson): "XPS: FULL: Broad-Purpose, Aggressively Asynchronous and Theoretically Sound Parallel Large-Scale Machine Learning", 09/01/2016 - 8/31/2020.

26. NSF CCF1629559 (PI): "XPS: FULL: Broad-Purpose, Aggressively Asynchronous and Theoretically Sound Parallel Large-Scale Machine Learning", 01/09/2016 -08/31/2020.

27. National Geospatial-Intelligence Agency (PI): "Versatile Visual Description with Knowledge-Enriched Inductive Biases and Multi-Source Lifelong Learning", 06/15/2020 - 06/14/2022.

28. NSF IIS1955532 (with Pradeep Ravikumar): "Collaborative Research: RI: Medium: A Rigorous, General Framework for Tractable Learning of Large-Scale DAGs from Data", 06/15/2020 - 05/31/2023.

29. NSF CNS200824 (PI): "CNS Core: RI: Small: Toward Globally-Optimal Resource Distribution and Computation Acceleration in Multi-Tenant and Heterogeneous Machine Learning Systems", 10/01/2020 - 09/30/2023.

30. NIGMS R01GM140467 (PI): "Sample-specific Models for Molecular Portraits of Diseases in Precision Medicine", 09/01/2020 - 08/31/2024.

Teaching

- **Instructor**, *Advanced Machine Learning* (10-715).
  This is an advanced course for Ph.D. students in the department of machine learning, focusing on advanced algorithms and theory for statistical machine learning.
- **Instructor**, *Machine Learning* (15-781/10-701).
  This is a core-curriculum course for SCS graduate students, focusing on fundamental algorithms and theory for statistical machine learning, pattern recognition and information retrieval.
- **Co-Instructor**, *Machine Learning* (10-601).
  This is a master-level course for SCS graduate and undergraduate students, focusing on algorithms and practice of statistical machine learning, and popular applications.
- **Co-Instructor**, *Computational Genomics* (10-810) (formally known as Computational Molecular Biology: a Machine Learning Approach).
  This course focuses on modern machine learning methodologies for computational problems in molecular biology and genetics. This is a core-curriculum course for CMU-Pitt computational biology Ph.D. program.
- **Instructor**, *Probabilistic Graphical Models* (10-708).
  This is an advanced machine learning course covering probabilistic graphical models for efficient inference, decision-making and learning in problems with a very large number of attributes, complex stochastic dependencies, and huge datasets.
- **Instructor**, *Advanced Topics in Graphical Models* (10-801).
  CMU, Spring 2007.
  This course covers advanced topics in approximate inference, model selection, Bayesian nonparametrics, and their applications.

Papers and Publications

Journal Papers

Published

[1] Y Zheng, H Wang, Y Zhang, X Gao, **E. P. Xing**, and M Xu *Poly (A)-DG: A deep-learning-based domain generalization method to identify cross-species Poly (A) signal without prior knowledge from target species*.
PLoS Computational Biology, 16 (11), e1008297, 2020

[2] K. Kandasamy, K. Vysyaraju, W. Neiswanger, B. Paria, C. Collins, J. Schneider, B. Poczos, and **E. P. Xing**, *Tuning Hyperparameters without Grad Students: Scalable and Robust Bayesian Optimisation with Dragonfly*.
Journal of Machine Learning Research, 21 (81), 1-27, 2020.

[3] M. Al-Shedivat, A. Dubey, and **E. P. Xing**, *Contextual Explanation Networks*.
Journal of Machine Learning Research, 21 (194), 1-44, 2020.

[4] K. Tran, W. Neiswanger, J. Yoon, Q. Zhang, **E. P. Xing**, Z. Ulissi *Methods for comparing uncertainty quantifications for material property predictions*.
Machine Learning: Science and Technology, Volume 1, Number 2, 2020.

[5] S. Kadambi, Z. Wang, **E. P. Xing**, Z. Ulissi *WGAN Domain Adaptation for the Joint Optic Disc-and-Cup Segmentation in Fundus Images*.
International Journal of Computer Assisted Radiology and Surgery, Volume 1, Number 2, 2020.

[6] H. Wang, T. Yue, J. Yang, W. Wu, and **E. P. Xing**, *Deep mixed model for marginal epistasis detection and population stratification correction in genome-wide association studiesr*.
BMC Bioinformatics, vol. 20, Suppl. 23, 2019.

[7] B. Aragam, C. Dan, P. Ravikumar, and **E. P. Xing**, *Identifiability Of Nonparametric Mixture Models And Bayes Optimal Clustering*.
Annals of Statistics, to appear, 2019.

[8] M. Marchetti-Bowick, Y. Yu, W. Wu, and **E. P. Xing**, *A penalized regression model for the joint estimation of eQTL associations and gene network structure*.
Annals of Applied Statistics, Vol. 13, No. 1, 248-270, 2019.

[9] M. Sachan, A. Dubey, E. Hovy, D. Roth, T. Mitchell and **E. P. Xing**, *Discourse in Multimedia: A Case Study in Information Extraction*.
Computational Linguistics journal, to appear, 2019.

[10] M. Kampffmeyer, N. Dong, X. Liang, Y. Zhang, **E. P. Xing**, *ConnNet: A Long-Range Relation-Aware Pixel-Connectivity Network for Salient Segmentation*.
IEEE Transactions on Image Processing, to appear, 2019.

[11] P. Xie and **E. P. Xing**, *Diversity-Promoting Bayesian Learning of Latent Variable Models*.
Journal of Machine Learning Research, to appear, 2018.

[12] Y. Zhou, Y. Liang, Y. Yu, W. Dai and **E. P. Xing**, *Distributed Proximal Gradient Algorithm for Partially Asynchronous Computer Clusters*.
Journal of Machine Learning Research, 19(19):1 - 32, 2018.

[13] H. Wang, X. Liu, Y. Xiao, M. Xu and **E. P. Xing** *Multiplex Confounding Factor Correction for Genomic Association Mapping with Squared Sparse Linear Mixed Model*.
Methods, 2018 Aug 1; 145: 33 - 40.

[14] H. Wang, B. Aragam and **E. P. Xing** *Variable selection in heterogeneous datasets: A truncated-rank sparse linear mixed model with applications to genome-wide association studies*.
Methods, 2018 Aug 1; 145: 2 - 9.

[15] H. Wang, B. J. Lengerich, B. Aragam and **E. P. Xing**, *Precision Lasso: Accounting for Correlations and Linear Dependencies in High-Dimensional Genomic Data*.
Bioinformatics, PMID: 30184048 DOI:10.1093/bioinformatics/bty750 , 2018.

[16] S. Lee, N. Gornitz, **E. P. Xing**, D. Heckerman, C. Lippert, *Ensembles of Lasso Screening Rules*.
IEEE Transaction on Pattern Analysis and Machine Intelligence, 2017 (10.1109/TPAMI.2017.2765321)

[17] X Chang, YL Yu, Y Yang and **E. P. Xing**, *Semantic pooling for complex event analysis in untrimmed videos*.

IEEE Transaction on Pattern Analysis and Machine Intelligence, 39 (8), 1617-1632, 2017

[18] S. Lee, H. Wang and **E. P. Xing** *Backward Genotype-Transcript-Phenotype Association Mapping*. Methods, Volume 129, 1 October 2017, Pages 18-23.

[19] Y. Zhou, K. Yuan, Y. Yu, X. Ni, P. Xie, **E. P. Xing**, S. Xu *Inference of multiple-wave population admixture by modeling decay of linkage disequilibrium with polynomial functions*. Heredity (Edinb), 118(5):503-510, 2017.

[20] M. Al-Shedivat, A. G. Wilson, Y. Saatchi, Z. Hu and **E. P. Xing**, *Learning Scalable Deep Kernels with Recurrent Structure*. Journal of Machine Learning Research, 18(82):1-37, 2017.

[21] L. Song, H. Liu, A. Parikh, and **E. P. Xing**, *Nonparametric Latent Tree Graphical Models: Inference, Estimation, and Structure Learning*. Journal of Machine Learning Research, 12, 663-707, 2017.

[22] **E. P. Xing**, Q. Ho, P. Xie, W. Dai, *Strategies and Principles of Distributed Machine Learning on Big Data*. Engineering, Volume:2, pp179 - 95, 2016.

[23] M. Marchetti-Bowick, J. Yin, J. Howrylak, and **E. P. Xing**, *A time-varying group sparse additive model for genome-wide association studies of dynamic complex traits*. Bioinformatics, 32 (19):btw347, 2016.

[24] Q. Ho, J. Yin, and **E. P. Xing**, *Latent Space Inference of Internet-Scale Networks*. Journal of Machine Learning Research, 17(78):1- 41, 2016.

[25] J. Howrylak, M. Moll, B. Raby, S. Weiss, W. Wu, and **E. P. Xing**, *Gene Expression Profiling of Asthma Phenotypes Demonstrates Molecular Signatures of Atopy and Asthma Control*. Journal of Allergy and Clinical Immunology, Volume 137, Issue 5, Pages 1390 - 1397, 2016.

[26] S. Lee, A. Lozano, P. Kambadur, and **E. P. Xing**, *An Efficient Nonlinear Regression Approach for Genome-wide Detection of Marginal and Interacting Genetic Variations*. Journal of Computational Biology, 23(5):372 - 89, 2016.

[27] X. Chang, Y. Yu, Y. Yang, and **E. P. Xing** *Semantic Pooling for Complex Event Analysis in Untrimmed Videos*. IEEE Transaction on Pattern Analysis and Machine Intelligence, PP(99), 2016

[28] Z. Guo, Z. Zhang, **E. P. Xing**, and C. Faloutsos, *Multimodal Data Mining in a Multimedia Database Based on Structured Max Margin Learning*. ACM Transactions on Knowledge Discovery from Data, Volume 10 Issue 3, February 2016.

[29] **E. P. Xing**, Q. Ho, W. Dai, J. Kim, J. Wei, S. Lee, X. Zheng, P. Xie, A. Kumar, and Y. Yu, *Petuum: A new Platform for Distributed Machine Learning on Big Data*. IEEE Transactions on Big Data, Volume:1 Issue:2, pp49 - 67, 2015.

[30] Bin Zhao and **E. P. Xing**, *Sparse Output Coding for Scalable Visual Recognition*. International Journal of Computer Vision, 119:60 - 75, 2015.

[31] W. Wang, Y. Liang, Lixin Shen, and **E. P. Xing**, *Nonparametric Decentralized Detection and Sparse Sensor Selection via Weighted Kernel*. IEEE Transactions on Signal Processing, Volume:64, Issue:2, pp306 - 321, 2015.

[32] A. Martins, M. Figueiredo, P. Aguiar, N.A. Smith, and **E. P. Xing**, *AD^3: Alternating Directions Dual Decomposition for MAP Inference in Graphical Models*. Journal of Machine Learning Research, 16(Mar): 495-545, 2015.

[33] W. Wang, Y. Liang and **E. P. Xing**, *Collective Support Recovery for Multi-Design Multi-Response Linear Regression*.

IEEE Transactions on Information Theory, vol. 61, no. 1, pp.513-534, 2015.

[34] J. Eisenstein, B. O'Connor, N. A. Smith, and **E. P. Xing**, *Diffusion of Lexical Change in Social Media*.
PLoS One, volume 9, Issue 11, e113114, 2014.

[35] **E. P. Xing**, R. Curtis, G. Schoenherr, S. Lee, J. Yin, K. Puniyani, W. Wu, P. Kinnaird, *GWAS in a Box: Statistical and Visual Analytics of Structured Associations via GenAMap*.
PLoS One, Volume 9, Issue 6, e97524, 2014.

[36] A. Parikh, R. Curtis, I. Kuhn, S. Becker, M. Bissell, **E. P. Xing**, and Wei Wu *Network Analysis of Breast Cancer Progression and Reversal Using a Tree-evolving Network Algorithm*.
PLoS Computational Biology, Volume 10, Issue 7, e1003713, 2014.

[37] S. Shringarpure and **E. P. Xing**, *Effects of Sample Selection Bias on the Accuracy of Population Structure and Ancestry Inference*.
Genes, Genomes, Genetics, vol. 4 no. 5, 901-911, 2014.

[38] D. Yogatama, C. Wang, B.R. Routledge, N.A. Smith, and **E. P. Xing**, *Dynamic Language Models for Streaming Text*.
Transactions of the Association for Computational Linguistics, 2:181-192, 2014.

[39] M. Kolar, H. Liu and **E. P. Xing**, *Graph Estimation From Multi-attribute Data*.
Journal of Machine Learning Research, 15:1713-1750, 2014.

[40] J. Zhu, N. Chen and **E. P. Xing**, *Bayesian Inference with Posterior Regularization, and applications to Infinite Latent SVMs*.
Journal of Machine Learning Research, 15:1799-1847, 2014.

[41] K. Puniyani and **E. P. Xing**, *GINI : From ISH images to Gene Interaction Networks*.
PLoS Computational Biology, 9(10): e1003227, 2013.

[42] K. Puniyani and **E. P. Xing**, *NP-MuScL: Unsupervised global prediction of interaction networks from multiple data sources*.
Journal of Computational Biology, 20(11):892-904, 2013.

[43] M. Yamada, W. Jitkrittum, L. Sigal, **E. P. Xing**, and M. Sugiyama, *High-Dimensional Feature Selection by Feature-Wise Kernelized Lasso*.
Neural Computation, Vol. 26, No. 1, Pages 185-20, 2013.

[44] R. Curtis, S. Kim, J. L. Woolford, W. Xu, and **E. P. Xing**, *Structured association analysis leads to insight into Saccharomyces cerevisiae gene regulation by finding multiple contributing eQTL hotspots associated with functional gene modules*.
BMC Genomics, vol. 14, no. 196, 2013.

[45] M. Kolar, and **E. P. Xing**, *Estimating Time-Varying Networks With Jumps*.
Electronic Journal of Statistics Vol. 6 (2012) 2069-2106 (arXiv:1012.3795).

[46] K. Sohn, Z. Ghahramani and **E. P. Xing**, *Robust estimation of local genetic ancestry in admixed populations using a non-parametric Bayesian approach*.
Genetics, vol 191, no. 4, 2012.

[47] J. Zhu, A. Ahmed, and **E. P. Xing** *MedLDA: Maximum Margin Supervised Topic Models*.
Journal of Machine Learning Research, 13 (2012) 2237-2278.

[48] R. Curtis, J. Xiang, A. Parikh, P. Kinnaird, and **E. P. Xing**, *Enabling dynamic network analysis through visualization in TVNViewer*.
BMC Bioinformatics, vol. 13, no. 204, 2012.

[49] R. Curtis, A. Goyal and **E. P. Xing**, *Enhancing the usability and performance of structured association mapping algorithms using automation, parallelization, and visualization in the GenAMap*

software system.
BMC Genetics, vol. 13, no. 24, 2012.

[50] S. Kim, and **E. P. Xing**, *Tree-Guided Group Lasso for Multi-Response Regression with Structured Sparsity, with applications to eQTL Mapping*.
Annals of Applied Statistics, Vol. 6, No. 3, 1095-1117, 2012.

[51] N. Chen, J. Zhu, F. Sun and **E. P. Xing** *Large-margin Predictive Latent Subspace Learning for Multi-view Data Analysis*.
IEEE Transaction on Pattern Analysis and Machine Intelligence, 34(12): 2365-2378, 2012

[52] Q. Ho, A. Parikh and **E. P. Xing**, *Multiscale Community Blockmodel for Network Exploration*.
Journal of American Statistical Association, Volume 107, Issue 499, 916-934, 2012

[53] X. Chen, Q. Lin, S. Kim, J. Carbonell and **E. P. Xing**, *A Smoothing Proximal Gradient Method for General Structured Sparse Learning*.
Annals of Applied Statistics, Vol. 6, No. 2, 719-752, 2012

[54] R.E. Curtis, A. Yuen, L. Song, A. Goyal, and **E. P. Xing**, *TVNViewer: An interactive visualization tool for exploring networks that change over time or space*.
Bioinformatics, doi: 10.1093/bioinformatics/btr273.

[55] S. Kim and **E. P. Xing**, *Exploiting Genome Structure in Association Analysis*.
Journal of Computational Biology, Vol 18, 1-16, 2011.

[56] S. Hanneke, W. Fu and **E. P. Xing**, *Discrete Temporal Models of Social Networks*.
Electronic Journal of Statistics, Vol. 4, 585 – 605, 2010. (arXiv:0908.1258).

[57] **E. P. Xing**, W. Fu, L. Song, *A State-Space Mixed Membership Blockmodel for Dynamic Network Tomography*.
Annals of Applied Statistics Vol. 4, No. 2, 535 – 566, 2010 (arXiv:0901.0138).

[58] M. Kolar, L. Song, A. Ahmed, and **E. P. Xing**, *Estimating Time-Varying Networks*.
Annals of Applied Statistics, Vol. 4, No. 1, 94 – 123, 2010 (arXiv:0812.5087).

[59] J. Zhu and **E. P. Xing** *Maximum Entropy Discrimination Markov Network*.
Journal of Machine Learning Research, 10(Nov):2531-2569, 2009.

[60] S. Kim and **E. P. Xing**, *Statistical Estimation of Correlated Genome Associations to a Quantitative Trait Network*.
PLoS Genetics, 5(8):e1000587, 2009.

[61] A. Ahmed and **E. P. Xing**, *Recovering Time-Varying Networks of Dependencies in Social and Biological Studies*.
Proc. Natl. Acad. Sci., vol. 106, no. 29, 11878-11883, 2009.

[62] S. Shringarpure and **E. P. Xing**, *mStruct: Inference of Population Structure in Light of Both Genetic Admixing and Allele Mutations*.
Genetics, Vol 182, Issue 2, 2009. (Journal version of [**??**].)

[63] A. Martins, M. Figueiredo, P. Aguiar, N.A. Smith, and **E. P. Xing**, *Nonextensive Entropic Kernels*.
Journal of Machine Learning Research, Vol 10, pp935-975, 2009. (Journal version of [**??**].)

[64] K-A Sohn and **E. P. Xing**, *A Hierarchical Dirichlet Process Mixture Model For Haplotype Reconstruction From Multi-Population Data*.
Annals of Applied Statistics, Vol. 3, No. 2, 791821, 2009.

[65] E. Airodi, D. Blei, S. Fienberg and **E. P. Xing**, *Mixed Membership Stochastic Blockmodels*.
Journal of Machine Learning Research, Vol 9:1981–2014, 2008. (Journal version of [**??**].)

[66] P. Ray, S. Shringarpure, M. Kolar and **E. P. Xing**, *CSMET: Comparative Genomic Motif Detection*

via Multi-Resolution Phylogenetic Shadowing.
PLoS Computational Biology, vol. 4, issue 6, p1-20, 2008.

[67] H. Kamisetty, **E. P. Xing** and C. J. Langmead, *Free Energy Estimates of All-Atom Protein Structures Using Generalized Belief Propagation*.
Journal of Computational Biology, 15(7): 755-766, 2008.

[68] J. Yang, R. Yan, Y. Liu, and **E. P. Xing**, *Harmonium Models for Video Classification*.
Statistical Analysis and Data Mining, vol. 1, issue 1, p23-37, 2008. (Journal version of [**??**].)

[69] K-A Sohn and **E. P. Xing**, *Spectrum: Joint Bayesian Inference of Population Structure and Recombination Event*.
Bioinformatics, 23: i479-i489, 2007. (Journal version of [**??**].)

[70] **E. P. Xing**, M. Jordan and R. Sharan, *Bayesian Haplotype Inference via the Dirichlet Process*.
Journal of Computational Biology, Volume 14, Number 3, Pp. 267-284, 2007. (Journal version of [**??**].)

[71] **E. P. Xing** and K-A Sohn *Hidden Markov Dirichlet Process: Modeling Genetic Recombination in Open Ancestral Space*.
Journal of Bayesian Analysis, vol. 2, Number 2, 2007. (Journal version of [**??**].)

[72] T. Lin, E.W. Myers and **E. P. Xing**, *Interpreting Anonymous DNA Samples From Mass Disasters — probabilistic forensic inference using genetic markers*.
Bioinformatics, 22(14): e298-e306, 2006. (Journal version of [**??**].)

[73] W. Wu, N. Dave, G.C. Tseng, T. Richards, **E. P. Xing**, and N. Kaminski, *Comparison of normalization methods for CodeLink Bioarray data*.
BMC Bioinformatics, vol. 6, no. 309, 2005.

[74] W. Wu, **E. P. Xing**, C. Myers, I. Mian and M. Bissell, *Evaluation of normalization methods for cDNA microarray data by k-NN classification*.
BMC Bioinformatics, vol. 6, no. 191, 2005.

[75] **E. P. Xing** and R. Karp *MotifPrototyper: a profile Bayesian model for motif family*.
Proc. Natl. Acad. Sci., vol. 101, no. 29, 10523-10528, 2004.

[76] **E. P. Xing**, D. Wolf, I. Dubchak, S. Spengler, M. Zorn, I. Muchnik and C. Kulikowski, *Automatic discovery of sub-molecular sequence domains in multi-aligned sequences: a dynamic programming algorithm for multiple alignment segmentation*.
J Theor Biol, 212(2):129-39, 2001.

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[305] G. Kim, **E. P. Xing**, and A. Torralba, *Modeling and Analysis of Dynamic Behaviors of Web Image Collections*.
Proceeding of the 12th European Conference of Computer Vision, 2010. (ECCV '10).

[306] A. Ahmed and **E. P. Xing**, *Timeline: A Dynamic Hierarchical Dirichlet Process Model for Recovering Birth/Death and Evolution of Topics in Literature*.
Proceedings of the 26th International Conference on Conference on Uncertainty in Artificial Intelligence, 2010. (UAI '10).

[307] J. Zhu, N. Lao and **E. P. Xing**, *Grafting-Light: Fast, Incremental Feature Selection and Structure Learning of Markov Random Fields*.
Proceedings of The 16th ACM SIGKDD Conference on knowledge Discovery and Data Mining, 2010. (KDD '10)

[308] M. Kolar, A. Parikh and **E. P. Xing**, *On Sparse Nonparametric Conditional Covariance Selection*.
Proceedings of the 27th International Conference on Machine Learning, 2010. (ICML '10)

[309] J. Zhu and **E. P. Xing**, *Conditional Topic Random Fields*.
Proceedings of the 27th International Conference on Machine Learning, 2010. (ICML '10)

[310] S. Kim and **E. P. Xing**, *Tree-Guided Group Lasso for Multi-Task Regression with Structured Sparsity*.
Proceedings of the 27th International Conference on Machine Learning, 2010. (ICML '10)

[311] K. Puniyani, S. Kim and **E. P. Xing**, *Multi-Population GWA Mapping via Multi-Task Regularized Regression*.
Proceedings of the Eighteenth International Conference on Intelligence Systems for Molecular Biology, 2010. (ISMB '10)

[312] K. Puniyani, C. Faloutsos and **E. P. Xing**, *SPEX^2: Automated Concise Extraction of Spatial Gene Expression Patterns from Fly Embryo ISH Images*.
Proceedings of the Eighteenth International Conference on Intelligence Systems for Molecular Biology, 2010. (ISMB '10)

[313] M. Kolar and **E. P. Xing**, *Ultra-high Dimensional Multiple Output Learning With Simultaneous Orthogonal Matching Pursuit*.
Proceedings of the 13th International Conference on Artificial Intelligence and Statistics, 2010. (AISTATS '10)

[314] S. Lee, **E. P. Xing** and M. Brudno, *MoGUL: Detecting Common Insertions and Deletions in a Pop-*

ulation
Proceedings of the Fourteenth Annual International Conference on Research in Computational Molecular Biology, 2010. (RECOMB '10)

[315] M. Kolar and **E. P. Xing**, *Sparsistent Learning of Varying-coefficient Models with Structural Changes*. Advances in Neural Information Processing Systems 23 (eds. J. Lafferty and C. Williams), MIT Press, Cambridge, MA, 2010. (NIPS '09).

[316] L. Song, M. Kolar and **E. P. Xing**, *Time-Varying Dynamic Bayesian Networks*. Advances in Neural Information Processing Systems 23 (eds. J. Lafferty and C. Williams), MIT Press, Cambridge, MA, 2010. (NIPS '09).

[317] X. Yang, S. Kim and **E. P. Xing**, *Heterogeneous Multitask Learning with Joint Sparsity Constraints*. Advances in Neural Information Processing Systems 23 (eds. J. Lafferty and C. Williams), MIT Press, Cambridge, MA, 2010. (NIPS '09).

[318] J. Zhu, A. Ahmed and **E. P. Xing**, *MedLDA: Maximum Margin Supervised Topic Models for Regression and Classification*.
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[319] J. Zhu and **E. P. Xing**, *On the Primal and Dual Sparsity in Markov Networks*.
Proceedings of the 26th International Conference on Machine Learning, 2009. (ICML '09)

[320] W. Fu, L. Song and **E. P. Xing**, *Dynamic Mixed Membership Block Model for Evolving Networks*.
Proceedings of the 26th International Conference on Machine Learning, 2009. (ICML '09)

[321] A. Martins, N. Smith and **E. P. Xing**, *Polyhedral Outer Approximations with Application to Natural Language Parsing*.
Proceedings of the 26th International Conference on Machine Learning, 2009. (ICML '09)

[322] A. Martins, N. Smith and **E. P. Xing**, *Concise Integer Linear Programming Formulations for Dependency Parsing*.
Proceedings of The 47th Annual Meeting of the Association for Computational Linguistics, 2009. (ACL '09) Recipient of the BEST PAPER Award.

[323] J. Zhu, **E. P. Xing** and B. Zhang, *Primal Sparse Max-Margin Markov Networks*.
Proceedings of The 15th ACM SIGKDD Conference on knowledge Discovery and Data Mining, 2009. (KDD '09)

[324] A. Ahmed, **E. P. Xing**, W. Cohen, and R. Murphy, *Structured Correspondence Topic Models for Mining Captioned Figures in Biological Literature*.
Proceedings of The 15th ACM SIGKDD Conference on knowledge Discovery and Data Mining, 2009. (KDD '09)

[325] S. Kim, K-A Sohn and **E. P. Xing**, *A Multivariate Regression Approach to Association Analysis of Quantitative Trait Network*.
Proceedings of the Seventeenth International Conference on Intelligence Systems for Molecular Biology, 2009. (ISMB '09)

[326] L. Song, M. Kolar and **E. P. Xing**, *KELLER: Estimating Time-Evolving Interactions Between Genes*.
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[327] W. Fu, P. Ray and **E. P. Xing**, *DISCOVER: A feature-based discriminative method for motif search in complex genomes*.
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[328] S. Hanneke and **E. P. Xing**, *Network Completion and Survey Sampling*.

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[329] J. Zhu, **E. P. Xing**, and B. Zhang, *Partially Observed Maximum Entropy Discrimination Markov Networks*.
Advances in Neural Information Processing Systems 22 (eds. Y. Bengio and D. Schuurmans), MIT Press, Cambridge, MA, 2009. (NIPS '08).

[330] E. Airodi, D. Blei, S. Fienberg and **E. P. Xing**, *Mixed Membership Stochastic Blockmodels*.
Advances in Neural Information Processing Systems 22 (eds. Y. Bengio and D. Schuurmans), MIT Press, Cambridge, MA, 2009. (NIPS '08).

[331] A.F.T. Martins, D. Das, N. A. Smith, and **E. P. Xing**, *Stacking Dependency Parser*.
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[332] A. Ahmed, K. Yu, W. Xu, Y. Gong, and **E. P. Xing**, *Training Hierarchical Feed-forward Visual Recognition Models Using Transfer Learning from Pseudo-Tasks*.
Proceeding of the 10th European Conference of Computer Vision, 2008. (ECCV '08).

[333] S. Kim and **E. P. Xing**, *Sparse Feature Learning in High-Dimensional Space via Block Regularized Regression*.
Proceedings of the 24th International Conference on Conference on Uncertainty in Artificial Intelligence, 2008. (UAI '08).

[334] J. Zhu, **E. P. Xing**, and B. Zhang, *Laplace Maximum Margin Markov Networks*.
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[335] A. Martins, M. Figueiredo, P. Aguiar, N.A. Smith, and **E. P. Xing**, *Nonextensive Entropic Kernels*.
Proceedings of the 25th International Conference on Machine Learning, 2008. (ICML '08).

[336] S. Shringarpure and **E. P. Xing**, *mStruct: A New Admixture Model for Inference of Population Structure in Light of Both Genetic Admixing and Allele Mutations*.
Proceedings of the 25th International Conference on Machine Learning, 2008. (ICML '08).

[337] W. Lin, **E. P. Xing**, and A. Hauptmann, *A Joint Topic and Perspective Model for Ideological Discourse*.
Proceedings of European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases, 2008. (ECML/PKDD '08).

[338] R. Nallapati, A. Ahmed, **E. P. Xing**, and W. Cohen, *Joint Latent Topic Models for text and citations*.
Proceedings of The Fourteen ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, 2008. (KDD '08).

[339] A. Ahmed and **E. P. Xing**, *Dynamic Non-Parametric Mixture Models and the Recurrent Chinese Restaurant Process*.
Proceedings of The Eighth SIAM International Conference on Data Mining, 2008. (SDM '08).

[340] Z. Guo, Z. Zhang, **E. P. Xing** and C. Faloutsos, *Semi-supervised Learning Based on Semiparametric Regularization*.
Proceedings of The Eighth SIAM International Conference on Data Mining, 2008. (SDM '08).

[341] T. Lin, P. Ray, G. K. Sandve, S. Uguroglu, and **E. P. Xing**, *BayCis: a Bayesian hierarchical HMM for cis-regulatory module decoding in metazoan genomes*
Proceedings of the Twelfth Annual International Conference on Research in Computational Molecular Biology, 2008. (RECOMB '08)

[342] B. Zhao and **E. P. Xing** *HM-BiTAM: Bilingual Topic Exploration, Word Alignment, and Translation*.
Advances in Neural Information Processing Systems 21 (eds. D. Koller and Y. Singer), MIT Press,

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[343] L. Chang, N. Pollard, T. Michell and **E. P. Xing** *Feature selection for grasp recognition from optical markers*.
Proceedings of the 2007 IEEE/RSJ Intl. Conference on Intelligent Robots and Systems, 2007. (IROS '07).

[344] K-A Sohn and **E. P. Xing**, *Spectrum: Joint Bayesian Inference of Population Structure and Recombination Event*.
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[346] Z. Guo, Z. Zhang, **E. P. Xing**, and C. Faloutsos, *Enhanced Max Margin Learning on Multimodal Data Mining in a Multimedia Database*.
Proceedings of The Thirteen ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, 2007. (KDD '07)

[347] L. Gu, **E. P. Xing**, and T. Kanade, *Learning GMRF Structures for Spatial Priors*.
Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition, 2007. (CVPR '07)

[348] Z. Guo, Z. Zhang, **E. P. Xing**, and C. Faloutsos, *A Max Margin Framework on Image Annotation and Multimodal Image Retrieval*.
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[349] A. Ahmed and **E. P. Xing**, *On tight approximate inference of logistic-normal admixture model*.
Proceedings of the Eleventh International Conference on Artificial Intelligence and Statistics, 2007. (AISTATS '07)

[350] J. Yang, Y. Liu, **E. P. Xing** and A. Hauptmann, *Harmonium-Based Models for Semantic Video Representation and Classification*.
Proceedings of The Seventh SIAM International Conference on Data Mining, 2007. (SDM '07). Recipient of the BEST PAPER Award.

[351] H. Kamisetty, **E. P. Xing** and C. J. Langmead, *Free Energy Estimates of All-atom Protein Structures Using Generalized Belief Propagation*.
Proceedings of the Eleventh Annual International Conference on Research in Computational Molecular Biology, 2007. (RECOMB '07)

[352] Y. Shi, F. Guo, W. Wu and **E. P. Xing**, *GIMscan: A New Statistical Method for Analyzing Whole-Genome Array CGH Data*.
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[353] F. Guo, W. Fu, Y. Shi and **E. P. Xing** *Reverse engineering temporally rewiring gene networks*.
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[354] K-A Sohn and **E. P. Xing** *Hidden Markov Dirichlet Process: Modeling Genetic Recombination in Open Ancestral Space*.
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Proceedings of the Fourteenth International Conference on Intelligent Systems for Molecular Biology, 2006. (ISMB '06)

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[357] B. Zhao and **E. P. Xing**, *BiTAM: Bilingual Topic AdMixture Models for Word Alignment*.
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[358] **E. P. Xing**, K-A. Sohn, M. Jordan and Y-W Teh, *Bayesian Multi-Population Haplotype Inference via a Hierarchical Dirichlet Process Mixture*.
Proceedings of the 23rd International Conference on Machine Learning (eds. W. Cohen and A. Moore), ACM Press, 1049-1057, 2006. (ICML '06)

[359] E. Airodi, D. Blei, S. Fienberg and **E. P. Xing**, *Combining Stochastic Block Models and Mixed Membership for Statistical Network Analysis*.
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[360] S. Hanneke and **E. P. Xing**, *Discrete Temporal Models of Social Networks*.
Proceedings of the Workshop on Statistical Network Analysis, the 23rd International Conference on Machine Learning, 2006. (SNA-ICML '06)

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Bayesian Statistics 8, Proceedings of the Valencia & ISBA Eighth World Meeting on Bayesian Statistics, 2006.

[362] E. Airodi, D. Blei, **E. P. Xing** and S. Fienberg, *Mixed membership stochastic block models for relational data, with applications to protein-protein interactions*.
Proceedings of International Biometric Society-ENAR Annual Meetings, 2006. Recipient of the John Van Ryzin Award.

[363] F. Li, Y. Yang and **E. P. Xing**, *From Lasso regression to Feature vector machine*.
Advances in Neural Information Processing Systems 19 (eds. Y. Weiss and B. Schölkopf and J. Platt), MIT Press, Cambridge, MA, 779–786, 2006. (NIPS '05)

[364] E. Airoldi, D. Blei, **E. P. Xing** and S. Fienberg, *A Latent Mixed Membership Model for Relational Data*.
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[365] Y. Liu, **E. P. Xing** and J. Carbonell, *Predicting Protein Folds with Structural Repeats Using a Chain Graph Model*.
Proceedings of the 22nd international conference on Machine learning (eds. L. De Raedt and S. Wrobel, ACM Press, New York, NY, USA, 513–520, 2005. (ICML '05)

[366] **E. P. Xing**, R. Yan and A. Hauptmann, *Mining Associated Text and Images with Dual-Wing Harmoniums*.
Proceedings of the 21st Annual Conference on Uncertainty in Artificial Intelligence (eds. F. Bacchus and T. Jaakkola), AUAI Press, Arlington, Virginia, 633–642, 2005. (UAI '05)

[367] B. Zhao, **E. P. Xing** and A. Waibel, *Bilingual Word Spectral Clustering for Statistical Machine*

Translation.
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[368] **E. P. Xing**, R. Sharan and M. Jordan, *Bayesian Haplotype Inference via the Dirichlet Process*.
Proceedings of the 21st International Conference on Machine Learning (eds. R. Greiner and D. Schuurmans), ACM Press, 879-886, 2004. (ICML '04)
An earlier version of this paper also appeared as a book chapter in Lecture Notes in Bioinformatics, Special issue for 2nd RECOMB Satellite Workshop on Computational Methods for SNPs and Haplotypes, 2004.

[369] **E. P. Xing**, M. Jordan and S. Russell, *Graph partition strategies for generalized mean field inference.*.
Proceedings of the 20th Annual Conference on Uncertainty in Artificial Intelligence (eds. M. Chickering and J. Halpern), AUAI Press, Arlington, Virginia, 602–611, 2004. (UAI '04)

[370] **E. P. Xing**, W. Wu, M. Jordan and R. Karp, *LOGOS: A modular Bayesian model for de novo motif detection*.
Proceedings of the 2nd IEEE Computer Society Bioinformatics Conference, IEEE Computer Society, Washington, DC, USA, 2:266–76, 2003. (CSB '03)

[371] **E. P. Xing**, M. Jordan and S. Russell, *A generalized mean field algorithm for variational inference in exponential families*.
Proceedings of the 19th Annual Conference on Uncertainty in Artificial Intelligence (eds. Meek and Kjælff), Morgan Kaufmann Publishers, San Francisco, CA, 583–591, 2003. (UAI '03). Recipient of the Runner-up Best Student Paper Award.

[372] **E. P. Xing**, *An expressive modular probabilistic model for de novo motif detection*.
Workshop on Learning Graphical Models for Computational Genomics, 18th International Joint Conference on Artificial Intelligence (IJCAI '03), 2003.

[373] **E. P. Xing**, A. Ng, M. Jordan and S. Russell, *Distance Metric Learning, with application to Clustering with side-information*.
Advances in Neural Information Processing Systems 15 (eds. S. Becker, S. Thrun and K. Obermayer), MIT Press, Cambridge, MA, 505–512, 2003. (NIPS 02)

[374] **E. P. Xing**, M. Jordan, R. Karp and S. Russell, *A Hierarchical Bayesian Markovian Model for Motifs in Biopolymer Sequences*.
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[375] **E. P. Xing** and R. Karp, *CLIFF: clustering of high-dimensional microarray data via iterative feature filtering using normalized cuts*.
Proceedings of the Ninth International Conference on Intelligent Systems for Molecular Biology, 2001. (ISMB '01)

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Proceedings of the Eighteenth International Conference on Machine Learning (eds. C. E. Brodley and A. P. Danyluk), Morgan Kaufmann Publishers Inc., San Francisco, CA, USA, 601–608, 2001. (ICML '01)

[377] **E. P. Xing**, C. Kulikowski, I. Muchnik, I. Dubchak, D. Wolf, S. Spengler and M. Zorn, *Analysis of ribosomal RNA sequences by combinatorial clustering*.
Proceedings of the Seventh International Conference on Intelligent Systems for Molecular Biology, AAAI Press, 287–296, 1999. (ISMB '99)

Unrefereed Technical Reports

[378] **E. P. Xing** and M. Jordan, *On semidefinite relaxation for normalized k-cut and connections to spectral clustering*.
Technical Report CSD-03-1265, Computer Science Division, UC Berkeley, 2003.

[379] **E. P. Xing**, *Dynamic Nonparametric Bayesian Models and the Birth-Death Process.*.
Technical Report CMU-CALD-05-114, Carnegie Mellon University, 2005.

[380] **E. P. Xing**, *On Topic Evolution*.
Technical Report CMU-CALD-05-115, Carnegie Mellon University, 2005.

[381] F. Guo and **E. P. Xing**, *Bayesian Exponential Family Harmoniums*.
Technical Report CMU-ML-06-103, Carnegie Mellon University, 2006.

[382] F. Li, Y-M. Yang and **E. P. Xing**, *Inferring regulatory networks using a hierarchical Bayesian graphical Gaussian model*.
Technical Report CMU-ML-06-117, Carnegie Mellon University, 2006.

Professional Service

- **Invited or Guest Lecturer**
  - The "Dragon Star Lecture" on Machine learning, 2009 (Tsinghua/Pekin University) and 2010 (Shanghai Jiaoto/Fudan University). Delivered a week-long 20 lecture series at the invitation of the Chinese Academic of Science.
  - Invited Lecturer on Probabilistic Graphical Models at University of Heidelberg, 2011. Delivered a week long lecture series at the invitation of University of Heidelberg.
- **Editorial Board** of
  - *Journal of the American Statistical Association* (associate editor)
  - *Annals of Applied Statistics* (associate editor)
  - *Journal of Machine Learning Research* (action editor)
  - *Machine Learning* Journal (action editor)
  - *IEEE Transactions on Pattern Analysis and Machine Intelligence* (associate editor)
  - *PLoS Computational Biology* (guest associate editor)
- **Member** of
  - DARPA Information Science and Technology (ISAT) Advisory Group
  - NIH Biodata Management and Analysis (BDMA) Study Section
- **Invited panelist/participant** of
  - DARPA CS Futures II, 2007-2008.
  - International Expert Review Committee of the Doctoral Plus Program (DK-plus) ÒPopulation GeneticsÓ of University of Vienna (October 22nd, 2008, and November 5, 2009), invited by the Austrian Science Fund (FWF) Board of Trustees.
- **Organizer or Co-Organizer** for
  - Workshop on "Divergence Methods for Probabilistic Inference, ICML 2014
  - Workshop on "Spectral Learning", NIPS 2012

  - Workshop on Structured Sparsity: Learning and Inference, ICML 2011
  - Workshop on Analyzing Graphs: Theories and Applications. Advances in Neural Information Processing Systems 22, NIPS-08 (2008)
  - Workshop on Statistical Models of Networks. Advances in Neural Information Processing Systems 21, NIPS-07 (2007)
  - Workshop on Learning in Structured Output Spaces. The 24th International Conference on Machine Learning, ICML-07 (2007)
  - Institute of Mathematical Statistics (IMS) Session on Dynamic Network Models. International Biometric Society-ENAR Annual Meetings, Atlanta, Georgia, 2007
  - Workshop on Learning in Structured Output Spaces. The 23rd International Conference on Machine Learning, ICML-06 (2006)
  - Workshop on Statistical Network Analysis: Models, Issues and New Directions. The 23rd International Conference on Machine Learning, ICML-06 (2006)
- **Chair, co-Chair**, or **Senior Program Committee** member for
  - General Chair, The Thirtyfifth International Conference on Machine Learning, ICML-19 (2019)
  - Program Committee Chair, The Thirtieth International Conference on Machine Learning, ICML-14 (2014)
  - Area Chair: Advances in Neural Information Processing Systems 26 NIPS-12, (2012).
  - Area Chair: Advances in Neural Information Processing Systems 25 NIPS-11, (2011).
  - Area Chair: The 28th International Conference on Machine Learning ICML-11, (2011).
  - Area Chair: The 19th International Conference on Intelligent Systems for Molecular Biology ISMB-11, (2011).
  - SPC: The Seventeenth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, KDD-11 (2011).
  - Area Chair: The 18th International Conference on Intelligent Systems for Molecular Biology ISMB-10, (2010).
  - Tutorial Chair: The 7th Asia Pacific Bioinformatics Conference, APBC09 (2009)
  - Publication Chair, and SPC, The Twenty-Fifth International Conference on Conference on Uncertainty in Artificial Intelligence, UAI'09 (2009)
  - SPC, The Fourteenth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, KDD-08 (2008)
  - SPC, The Fourteenth Annual International Conference on Research in Computational Molecular Biology, RECOMB-10 (2010).
  - SPC, The Thirteenth Annual International Conference on Research in Computational Molecular Biology, RECOMB-09 (2009).
  - SPC, The Twelfth Annual International Conference on Research in Computational Molecular Biology, RECOMB-08 (2008).
  - SPC, The Twenty-Fourth International Conference on Machine Learning, ICML-07 (2007)
- **Program Committee** member for
  - The 24th International Conference on Conference on Uncertainty in Artificial Intelligence, UAI'08 (2008)
  - European Conference on Computer Vision, ECCV-08 (2008)

  - The NIPS workshop on Machine Learning in Computational Biology, NIPS (2007)
  - Joint Conference on Empirical Methods in Natural Language Processing and Computational Natural Language Learning, EMNLP-CoNLL (2007)
  - The 11th IEEE International Conference on Computer Vision, ICCV (2007)
  - IEEE Conference on Computer Vision and Pattern Recognition Program, CVPR (2007, 2008)
  - SIAM International Conference on Data Mining, SDM (2007)
  - Workshop on Multimodal Information Retrieval. The Twentieth International Joint Conference of Artificial Intelligence, IJCAI (2007)
  - Workshop on Learning with Nonparametric Bayesian Mothods. The Twenty-Third International Conference on Machine Learning, ICML (2006)
  - The Twenty-Third International Conference on Machine Learning, ICML (2006)
  - The Twenty-First, Twenty-Third, National Conference on Artificial Intelligence, AAAI (2006, 2008), and and AAAI-08 Nectar track (2008)
  - The Fourth and Seventh Asia-Pacific Bioinformatics Conference, APBC (2006, 2009)
  - The Sixteenth, Seventeenth and Eighteenth International Conference on Genome Informatics (2005, 2006, 2007)
  - The Tenth and Eleventh International Conference on Artificial Intelligence and Statistics, AISTAT (2005, 2007)
  - The First, Second, Third, and Fifth Annual RECOMB Satellite Workshop on Regulatory Genomics (2004, 2005, 2006, 2008)
- **Reviewer** for
  - *American Journal of Human Genetics*,
  - *Annals of Applied Statistics*,
  - *Proc. Natl. Acad. Sci.*,
  - *PLOS Computational Biology*,
  - *PLOS Genetics*,
  - *ACM Transactions on Knowledge Discovery from Data*,
  - *Bioinformatics*,
  - *BMC Bioinformatics*,
  - *International Journal of Computer Vision*,
  - *Journal of American Statistical Association*,
  - *Journal of Computational Biology*,
  - *Journal of Machine Learning Research*,
  - *Journal of Artificial Intelligence Research*,
  - *IEEE Transactions on Information Theory*,
  - *Genome Research*,
  - *Knowledge and Information Systems*,
  - *Machine Learning*,
  - *Nature, Methods*,
  - *Nucleic Acid Research*,

  - *Social Networks*,
  - *Statistica Sinica*,
  - Annual Conference on Advances in Neural Information Processing Systems (*NIPS*),
  - Annual Conference on Uncertainty in Artificial Intelligence (*UAI*),
  - Annual Conference on International Conference on Machine Learning (*ICML*),
  - Annual IEEE Conference on Computer Vision and Pattern Recognition (*CVPR*),
  - Annual Conference on Research in Computational Molecular Biology (*RECOMB*),
  - Annual Conference on Intelligent Systems for Molecular Biology (*ISMB*),
  - Annual Pacific Symposium on Biocomputing (*PSB*),
  - National Conference on Artificial Intelligence (*AAAI*).
- **Grant Panelist** (domestic) for
  - Biological Databases & Informatics, National Science Foundation
  - Information & Knowledge Management panel, IIS, National Science Foundation
  - Plant Genome Research Program, National Science Foundation
  - NSF Career Panel
  - NSF RI/IIS Panel
  - NIH BDMA study section
  - NIH Special Emphasis Panel
  - NIH DirectorÕs New Innovator Award Panel
- **Grant and Award Reviewer/Panelist** (international) for
  - Austrian Science Fund (FWF)
  - British Computer Society (BCS), Distinguished Dissertation Award
  - Canada Foundation for Innovation (CFI)
  - Israel Science Foundation
  - The Research Grants Council (RGC) of Hong Kong
  - The Wellcome Trust
- **Professional organizations:**
  - Institute of Mathematical Statistics (IMS),
  - Association for Computing Machinery (ACM),
  - Institute of Electrical and Electronics Engineers (IEEE),
  - International Society for Bayesian Analysis (ISBA),
  - American Association for Artificial Intelligence (AAAI),
  - American Association for Cancer Research (AACR),
  - International Society for Computational Biology (ISCB).

University Services (A partial listing)

- Annual Machine Learning Summer School, co-organizer (2005, 2006), Machine Learning Department, CMU.

- Faculty Search Committee, member (2006, 2007, 2008, 2012, 2013,2015,2016), chair (2013,2015), Machine Learning Department, CMU.
- Admissions Committee, member (2006), Machine Learning Department, CMU.
- Admissions Committee, member (2005), Language Technology Institute, CMU.
- Admissions Committee, member (2006), chair (2007, 2008), Joint CMU-Pitt Ph.D. Program in Computational Biology.
- Curriculum Committee, member (2006, 2007), Joint CMU-Pitt Ph.D. Program in Computational Biology.
- ACM Doctoral Dissertation Award and SCS Best Thesis Award Committee, member (2007), chair (2008), SCS, CMU.
- New Collaborations Competition, Reviewer (2007), Language Technology Institute, CMU.

Advising

Current students, Postdocs, and Research Scientists:

Graduate Student:

Current Ph.D. Students: Abutalib Aghayev (CSD, co-advising with Garth Gibson), Maruan Al-Shedivat (MLD), Zhiting Hu (MLD), Lisa Lee (MLD), Ben Lengerich (CBD), Micol Marchetti-Bowick (MLD), Wei Dai (MLD), Kumar Avinava Dubey (MLD), Jin Kyu Kim (CSD, co-advising with Garth Gibson), Willie Neiswanger (MLD), Aurick Qiao (CSD), Mrinmaya Sachan (MLD), Haohan Wang (LTI), Jinliang Wei (co-advising with Garth Gibson), Pengtao Xie (MLD), Hao Zhang (RI), Xun Zheng (MLD, co-advising with Predeep Ravikuma).

Current M.S. Students: None

Post Doctoral Fellow and Project Scientist: Xiaodan Liang (National Singapore University), Bryon Aragam (UCLA)

Students graduated:
Henry Lin (LTI, M.S. 2006, now Research Scientist at Microsoft Research)
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Wenjie Fu (CSD, MS. 2009, now Software Engineer at Facebook)
Pradipta Ray (LTI, Ph.D. 2010, now Research Scientist at U. of Texas)
Amr Ahmed (LTI, Ph.D. 2011, now Research Scientist at Google, KDD 2012 best dissertation winner)
Hetunandan Kamichetty (CSD, Ph.D. 2011, now Research Scientist at Facebook, honorable mention, SCS Doctoral Dissertation Award, 2011.))
Ross Curtis (CompBio, Ph.D. 2011, now Software Engineer at AncestryDNA)
Kyung-Ah Sohn (CSD, Ph.D. 2011, now Assistant Professor at Ajou University, South Korea)
Anuj Goyal (LTI, M.S. 2012, now Software Engineer at LinkedIn)
Andre Martins (LTI, Ph.D. 2012, now Research Scientist, Priberam Labs and Instituto Superior Tcnico, honorable mention, SCS Doctoral Dissertation Award, 2012.)
Suyash Shringarpure (MLD, Ph.D. 2012, now Postdoc at Stanford University)
Mladen Kolar (MLD, Ph.D. 2013, now Assistant Professor at U. of Chicago, KDD 2014 best dissertation

honorable mention)
Kriti Puniyani (LTI, Ph.D. 2013, now Research Scientist at Google)
Gunhee Kim (CSD, Ph.D. 2013, now Assistant Professor at Seoul National University, KDD 2014 best dissertation winner)
Judie Howrylak (M.D./Ph.D., 2013, now Assistant Professor, Penn State University Medical Center)
Abhimanu Kumar (LTI, MS, 2014, now Director of Engineer, GageIn)
Qirong Ho (MLD, Ph.D. 2014, (now CTO, Petuum Inc. KDD 2015 best dissertation runner-up)
Bin Zhao (MLD, Ph.D. 2014, VP of ML at Petuum Inc.)
Seunghak Lee (CSD, Ph.D. 2015, now Research Scientist, Human Longevity)
Ankur Parikh (MLD, Ph.D. 2015, now Research Scientist at Google, Assistant Professor at NYU)
Seunghak Lee (2016, Research Scientist, Facebook)
Pengtao Xie (2018, Associate VP of ML, Petuum Inc.; Assistant Professor at UCSD) Wei Dai (2018, Research Scientist, Apple)
Jin Kyu Kim (2019, Research Scientist, Facebook)
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Postdocs graduated:
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Chong Wang (2014, Microsoft Research)
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Andrew Wilson (2016, Asst Prof. cs@Cornell University)
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