# Mladen Kolar

| CONTACT INFORMATION | | |
|---|---|---|
| | The University of Chicago | *Office:* (773) 834-8523 |
| | Booth School of Business | *Cell:* (412) 447-1810 |
| | 5807 S. Woodlawn Ave. | *E-mail:* mkolar@chicagobooth.edu |
| | Suite 338 | *WWW:* mkolar.coffeejunkies.org |
| | Chicago, IL 60637 USA | |

**RESEARCH INTERESTS**

Probabilistic graphical models
Dynamic networks estimation
High-dimensional estimation and inference
Stochastic optimization with constraints
Distributed optimization and federated learning

**EDUCATION**

**Carnegie Mellon University**, Pittsburgh, Pennsylvania USA          **August 2007 - July 2013**

Ph.D. in Machine Learning
Thesis: "Uncovering Structure in High-Dimensions: Networks and Multi-task Learning Problems"
Advisor: Eric P. Xing

**University of Zagreb**, Zagreb, Croatia          **October 2001 - September 2006**

Faculty of Electrical Engineering and Computing
Diploma [B.Sc] in Computer Engineering (4.00 GPA)
Thesis: "Correspondence analysis applied to text data"

**POSITIONS**

**The University of Chicago Booth School of Business**          **October 2017 - present**
Associate Professor of Econometrics and Statistics

**The University of Chicago Booth School of Business**          **July 2013 - October 2017**
Assistant Professor of Econometrics and Statistics

**TEACHING EXPERIENCE**

*The University of Chicago Booth School of Business*
- **BUS41204 Machine Learning**          Fall 2015, Spring 2016, Winter 2017-2022
- **BUS41812 Machine Learning (EXP)**          Summer 2017, 2018
- **BUS41000 Business Statistics**          Spring 2014-2016

*Carnegie Mellon University*
- **10-601 Machine Learning**          Fall 2011
- **10-702 Statistical Machine Learning**          Spring 2010

*Other*
- **Croatian informatics association**, Zagreb, Croatia          2001 - 2004
  Prepared high-school students for Croatian and international competitions in informatics.

| | |
|---|---|
| | 2017-2020, William S. Fishamn Faculty Scholar |
| | 2014-2017, IBM Corporation Faculty Scholar |
| | 2015, J. T. Oden Faculty Fellow |
| | 2014, SIGKDD Dissertation Awards, Honorable mention |
| | 2013, Simons-Berkeley Research Fellow |
| | 2010–2011, Facebook Fellowship |
| | 2006, Rector's Award (University of Zagreb), for work on computer aided document indexing |
| | 2006, "SCIENCE" award for the best undergraduate paper in the field of technical sciences |
| | 2006, Award Josip Loncar, given for the best student in the class |
| | 2005, Winner of the prestigious scholarship "Top Stipendija" (best 25 students in the country) |
| | 2002, 7th place in ACM Central Europe Programming Contest (participated 2001, 2003) |
| | 2001, Bronze medal in International Olympiad in Informatics, Finland |
| | 2000/2001, Participated in American Computer Science League |
| | 1998, 2nd place in Regional Chess Competition |

SUBMITTED WORK

[22] Adaptive Client Sampling in Federated Learning via Online Learning with Bandit Feedback
B. Zhao, Z. Liu, C. Chen, M. Kolar, Z. Zhang, and J. Zhou
*Technical report* (Dec. 2021). arXiv: 2112.14332 [cs.LG]

[21] Joint Gaussian Graphical Model Estimation: A Survey
K. Tsai, O. Koyejo, and M. Kolar
*Technical report* (Oct. 2021). arXiv: 2110.10281 [stat.ME]

[20] Inequality Constrained Stochastic Nonlinear Optimization via Active-Set Sequential Quadratic Programming
S. Na, M. Anitescu, and M. Kolar
*Technical report* (Sept. 2021). arXiv: 2109.11502 [math.OC]

[19] A Fast Temporal Decomposition Procedure for Long-horizon Nonlinear Dynamic Programming
S. Na, M. Anitescu, and M. Kolar
*Technical report* (July 2021). arXiv: 2107.11560 [math.OC]

[18] Local AdaGrad-Type Algorithm for Stochastic Convex-Concave Minimax Problems
L. Liao, L. Shen, J. Duan, M. Kolar, and D. Tao
*Technical report* (June 2021). arXiv: 2106.10022 [cs.LG]

[17] High-dimensional Functional Graphical Model Structure Learning via Neighborhood Selection Approach
B. Zhao, S. Zhai, Y. S. Wang, and M. Kolar
*Technical report* (May 2021). arXiv: 2105.02487 [stat.ML]

[16] Provable Convergence to Nash Equilibrium in Variationally Stable Markov Game via Proximal Policy Optimization
Y. Luo, Z. Yang, M. Kolar, Z. Wang
Submitted 2021.

[15] Instrumental Variable Value Iteration for Causal Offline Reinforcement Learning
L. Liao, Z. Fu, Z. Yang, M. Kolar, and Z. Wang
*Technical report* (Feb. 2021). arXiv: 2102.09907 [stat.ML]

[14] Personalized Federated Learning: A Unified Framework and Universal Optimization Techniques
F. Hanzely, B. Zhao, and M. Kolar
*Technical report* (Feb. 2021). arXiv: 2102.09743 [cs.LG]

[13] An Adaptive Stochastic Sequential Quadratic Programming with Differentiable Exact Augmented Lagrangians
S. Na, M. Anitescu, and M. Kolar

*Technical report* (Feb. 2021). arXiv: 2102.05320 [math.OC]

[12] Provably Training Neural Network Classifiers under Fairness Constraints
Y.-L. Chen, Z. Wang, and M. Kolar
*Technical Report* (Dec. 2020). arXiv: 2012.15274 [stat.ML]

[11] A Nonconvex Framework for Structured Dynamic Covariance Recovery
K. Tsai, M. Kolar, and O. Koyejo
*Technical report* (Nov. 2020). arXiv: 2011.05601 [stat.ML]

[10] Convergence Analysis of Accelerated Stochastic Gradient Descent under the Growth Condition
Y.-L. Chen, S. Na, and M. Kolar
*Technical report* (June 2020). arXiv: 2006.06782 [math.OC]

[9] Statistical Inference for Networks of High-Dimensional Point Processes
X. Wang, M. Kolar, and A. Shojaie
*Technical report* (July 2020). arXiv: 2007.07448v1 [stat.ML]

[8] FuDGE: Functional Differential Graph Estimation with fully and discretely observed curves
B. Zhao, Y. S. Wang, and M. Kolar
*Technical report* (Mar. 2020). arXiv: 2003.05402v1 [stat.ML]

[7] Posterior Ratio Estimation for Latent Variables
Y. Zhang, M. Yi, S. Liu, and M. Kolar
*Technical report* (Feb. 2020). arXiv: 2002.06410v1 [stat.ML]

[6] Natural Actor-Critic Converges Globally for Hierarchical Linear Quadratic Regulator
Y. Luo, Z. Yang, Z. Wang, and M. Kolar
*Technical report* (Dec. 2019). arXiv: 1912.06875v1 [cs.LG]

[5] Constrained High Dimensional Statistical Inference
M. Yu, V. Gupta, M. Kolar
Technical report. 2019. arXiv:1911.07319

[4] Quantifying Uncertainty in High-Dimensional Quantile Regression
J. Bradic, M. Kolar
Technical report. 2015. arXiv:1702.06209

[3] A General Framework for Robust Testing and Confidence Regions in High-Dimensional Quantile Regression
T. Zhao, M. Kolar, H. Liu
Technical report. 2014. arXiv:1412.8724

[2] Inference for Sparse Conditional Precision Matrices
J. Wang, M. Kolar
Technical report. 2014. arXiv:1412.7638

[1] Mean and variance estimation in high-dimensional heteroscedastic models with non-convex penalties
J. Sharpnack, M. Kolar
Technical report. 2014. arXiv:1410.7874

PUBLICATIONS

[58] Inference for high-dimensional varying-coefficient quantile regression
R. Dai and M. Kolar
*Electronic Journal of Statistics* 15(2) (Dec. 2021). arXiv: 2002.07370v1 [stat.ME]

[57] Dynamic Regret Minimization for Control of Non-stationary Linear Dynamical Systems
Y. Luo, V. Gupta, and M. Kolar
*Accepted to SIGMETRICS 2022* (Nov. 2021). arXiv: 2111.03772 [cs.LG]

[56] Two-sample inference for high-dimensional Markov networks
B. Kim, S. Liu, and M. Kolar
*Journal of the Royal Statistical Society. Series B.* 83(5) (2021). arXiv: 1905.00466 [stat.ME]

[55] Estimating differential latent variable graphical models with applications to brain connectivity
S. Na, M. Kolar, and O. Koyejo
*Biometrika* 108(2) (2021). arXiv: 1909.05892 [math.ST]

[54] High-dimensional index volatility models via Stein's identity
S. Na and M. Kolar
*Bernoulli* 27(2) (2021). arXiv: `1811.10790` [`math.ST`]

[53] Robust Inference for High-Dimensional Linear Models via Residual Randomization
Y. S. Wang, S. K. Lee, P. Toulis, and M. Kolar
*International Conference on Machine Learning (ICML)* (2021). arXiv: `2106.07717` [`stat.ME`]

[52] Tensor Canonical Correlation Analysis With Convergence and Statistical Guarantees
Y.-L. Chen, M. Kolar, and R. S. Tsay
*Journal of Computational and Graphical Statistics* 30(3) (2021). arXiv: `1906.05358` [`stat.ML`]

[51] Provably Efficient Neural Estimation of Structural Equation Models: An Adversarial Approach
L. Liao, Y. Chen, Z. Yang, B. Dai, M. Kolar, and Z. Wang
*Advances in Neural Information Processing Systems (NeurIPS)* (2020). arXiv: `2007.01290` [`stat.ML`]

[50] Kernel meets sieve: post-regularization confidence bands for sparse additive model
J. Lu, M. Kolar, and H. Liu
*Journal of the American Statistical Association* 115(532) (2020). arXiv: `1503.02978` [`stat.ML`]

[49] Simultaneous Inference for Pairwise Graphical Models with Generalized Score Matching
M. Yu, V. Gupta, and M. Kolar
*Journal of Machine Learning Research* 21(91) (2020). arXiv: `1905.06261` [`stat.ME`]

[48] Semiparametric Nonlinear Bipartite Graph Representation Learning with Provable Guarantees
S. Na, Y. Luo, Z. Yang, Z. Wang, and M. Kolar
*International Conference on Machine Learning (ICML)* (2020). arXiv: `2003.01013` [`stat.ML`]

[47] Estimation of a Low-rank Topic-Based Model for Information Cascades
M. Yu, V. Gupta, and M. Kolar
*Journal of Machine Learning Research* 21(71) (2020). arXiv: `1709.01919v2` [`stat.ML`]

[46] Recovery of simultaneous low rank and two-way sparse coefficient matrices, a nonconvex approach
M. Yu, V. Gupta, and M. Kolar
*Electronic Journal of Statistics* 14(1) (2020). arXiv: `1802.06967` [`stat.ML`]


[45] M. Yu, V. Gupta, M. Kolar. Recovery of simultaneous low rank and two-way sparse coefficient matrices, a nonconvex approach. EJS 2020. arXiv:1802.06967

[44] B. Zhao, Y. S. Wang, M. Kolar. Direct Estimation of Differential Functional Graphical Models. NeurIPS 2019. arXiv:1910.09701

[43] M. Yu, Z. Yang, M. Kolar, Z. Wang. Convergent Policy Optimization for Safe Reinforcement Learning. NeurIPS 2019. arXiv:1910.12156

[42] S. Na, Z. Yang, Z. Wang, M. Kolar. High-dimensional Varying Index Coefficient Models via Stein's Identity. JMLR 2019. arXiv:1810.07128

[41] M. Yu, V. Gupta, M. Kolar. Learning influence-receptivity network structure with guarantee. AISTATS 2019. arXiv:1806.05730

[40] S. Geng, M. Yan, M. Kolar, O. Koyejo. Partially Linear Additive Gaussian Graphical Models. ICML 2019. arXiv:1906.03362

[39] S. Geng, M. Kolar, O. Koyejo. Joint Nonparametric Precision Matrix Estimation with Confounding. UAI 2019. arXiv:1810.07147

[38] M. Yu, Z. Yang, T. Zhao, M. Kolar, Z. Wang. Provable gaussian embedding with one observation. NeurIPS 2018.

[37] R. Foygel Barber, M. Kolar. ROCKET: Robust Confidence Intervals via Kendall's Tau for Transelliptical Graphical Models. AOS 2018. arXiv:1502.07641

[36] J. Lu, M. Kolar, H. Liu. Post-Regularization Inference for Time-Varying Nonparanormal Graphical Models. JMLR 2017. arXiv:1512.08298

[35] J. Wang, J. D. Lee, M. Mahdavi, M. Kolar, N. Srebro. Sketching Meets Random Projection in the Dual: A Provable Recovery Algorithm for Big and High-dimensional Data. EJS, 2017.

[34] A. S. Suggala, M. Kolar, P. Ravikumar. The Expxorcist: Nonparametric Graphical Models Via Conditional Exponential Densities. NIPS 2017.

[33] M. Yu, V. Gupta, M. Kolar. An Influence-Receptivity Model for Topic based Information Cascades. ICDM 2017.

[32] S. Balakrishnan, M. Kolar, A. Rinaldo and A. Singh. Recovering Block-structured Activations Using Compressive Measurements. EJS 2017.

[31] J. Wang, M. Kolar, N. Srebro, T. Zhang. Efficient Distributed Learning with Sparsity. ICML 2017.

[30] J. Wang, J. D. Lee, M. Mahdavi, M. Kolar, N. Srebro. Sketching Meets Random Projection in the Dual: A Provable Recovery Algorithm for Big and High-dimensional Data. AISTATS 2017.

[29] M. Yu, V. Gupta, M. Kolar. Statistical Inference for Pairwise Graphical Models Using Score Matching. NIPS 2016.

[28] M. Kolar, M. Taddy. Comment: Coauthorship and Citation Networks for Statisticians, AOAS 2016.

[27] J. Wang, M. Kolar. Inference for High-dimensional Exponential Family Graphical Models. AISTATS 2016

[26] J. Wang, M. Kolar, N. Srebro. Distributed Multi-Task Learning. AISTATS 2016

[25] S. Sun, M. Kolar, J. Xu. Learning Structured Densities via Infinite Dimensional Exponential Families. NIPS 2015

[24] I. Gaynanova, M. Kolar. Optimal Variable Selection in Multi-Group Sparse Discriminant Analysis. EJS 2015

[23] M. Kolar, H. Liu. Optimal ROAD For Feature Selection in High-Dimensional Classification. IEEE Information Theory, 2014

[22] L. Wasserman, M. Kolar, A. Rinaldo. Berry-Esseen Bounds for Estimating Undirected Graphs. Electronic Journal of Statistics 2014.

[21] M. Kolar, H. Liu, E. P. Xing. Graph Estimation From Multi-attribute Data. Journal of Machine Learning Research 2014.

[20] M. Kolar, H. Liu, E. P. Xing. Markov Network Estimation From Multi-attribute Data. ICML 2013.

[19] M. Kolar, H. Liu. Feature Selection in High-Dimensional Classification. ICML 2013.

[18] M. Kolar, E. P. Xing. Estimating Networks with Jumps. Electronic Journal of Statistics, 2012.

[17] M. Kolar, J. Sharpnack. Variance Function Estimation in High-dimensions. ICML 2012.

[16] M. Kolar, E.P. Xing. Consistent Covariance Selection From Data With Missing Values. ICML 2012.

[15] M. Kolar, H. Liu. Marginal Regression for Multitask Learning. AIStats 2012 (oral presentation)

[14] S. Balakrishnan, M. Kolar, A. Rinaldo, A. Singh, and L. Wasserman. Statistical and computational tradeoffs in biclustering. NIPS 2011 – Computational Trade-offs in Statistical Learning.

[13] M. Kolar, S. Balakrishnan, A. Rinaldo, and A. Singh. Minimax Localization of Structural Information in Large Noisy Matrices. NIPS 2011.

[12] M. Kolar, E.P. Xing. On Time Varying Undirected Graphs. AIStats, 2011.

[11] M. Kolar, J. Lafferty and L. Wasserman. Union Support Recovery in Multi-task Learning. Journal of Machine Learning, 2010.

[10] M. Kolar, A. Parikh and E.P. Xing. On Sparse Conditional Covariance Selection. ICML 2010.

[9] M. Kolar, E.P. Xing. Ultra-high Dimensional Multiple Output Learning With Simultaneous Orthogonal Matching Pursuit: Screening Approach. AIStats 2010.

[8] L. Song, M. Kolar, E.P. Xing. Time-Varying Dynamic Bayesian Networks. NIPS 2009.

[7] M. Kolar, L. Song, E.P. Xing. Sparsistent Learning of Varying-coefficient Models with Structural Changes. NIPS 2009.

[6] L. Song, M. Kolar, E.P. Xing. Estimating time-evolving interactions between genes. The Sixteenth International Conference on Intelligence Systems for Molecular Biology (ISMB 2009). Bioinformatics 2009 25(12):i128-i136.

[5] M. Kolar, L. Song, A. Ahmed, E.P. Xing. Estimating time-varying networks. Annals of Applied

Statistics, 2010.

[4] M. Kolar, E.P. Xing. Time varying ising models. NIPS 2008 – Analyzing Graphs: Theory and Applications.

[3] P. Ray, S. Shringarpure, M. Kolar, E.P. Xing, CSMET: Comparative Genomic Motif Detection via Multi-Resolution Phylogenetic Shadowing, PLoS Computational Biology (2008), Vol 4 (6), June 2008

[2] S. Petrovic, B. Dalbelo Basic, J. Snajder, M. Kolar. Comparison of Collocation Extraction Measures for Document Indexing. Journal of Computing and Information Technology – CIT 14 (2006), 4, (**best student papers**, ITI 2006)

[1] M. Kolar, I. Vukmirovic, B. Dalbelo Basic, J. Snajder. Computer-Aided document Indexing Systems. Journal of Computing and Information Technology - CIT. 13 (2005), 4; 299-305, (**awarded with the "SCIENCE" award**)

BOOK CHAPTERS

[1] E. P. Xing, M. Kolar, S. Kim, X. Chen. High-Dimensional Sparse Structured Input-Output Models, with Applications to GWAS. In Practical Applications of Sparse Modeling, edited by I. Rish, G. A. Cecchi, A. Lozano, A. Niculescu-Mizil.

UNPUBLISHED TECHNICAL REPORTS

[4] S. Na, M. Ma, M. Kolar. Scalable Peaceman-Rachford Splitting Method with Proximal Terms. 2018. arXiv:1711.04955

[3] W. Wang, J. Wang, M. Kolar, N. Srebro. Distributed Stochastic Multi-Task Learning with Graph Regularization. 2017. arXiv:1802.03830

[2] J. Wang, M. Kolar, N. Srebro. Distributed Multi-Task Learning with Shared Representation. 2016. arXiv:1603.02185

[1] M. Kolar, E. P. Xing. Sparsistent Estimation of Time-Varying Discrete Markov Random Fields. April 2013. arXiv:0907.2337

INVITED TALKS

[115] Joint Statistical Meeting. Washington, DC. August 2022.

[114] IMS Annual Meeting. London, UK. June 2022.

[113] International Symposium on Nonparametric Statistics. Paphos, Cyprus. June 2022.

[112] Northwestern University, Department of Industrial Engineering and Management Sciences. Evanston, IL. January 2022.

[111] Toyota Technology Institute. Chicago, IL. December 2021.

[110] Technical University of Munich. Munich, Germany. November 2021.

[109] International Indian Statistical Association (IISA) 2021 Conference. Online. May 2021.

[108] University of Zurich, Department of Economics. Online. April 2021.

[107] Texas A&M, Department of Statistics. Online. April 2021.

[106] Colorado State University, Department of Statistics. Online. October 2020.

[105] University of Bristol, Statistics Seminar. Online. October 2020.

[104] International Indian Statistical Association (IISA) 2020 Conference. Chicago, IL. July 2020. (cancelled due to COVID-19)

[103] International Symposium on Nonparametric Statistics. Paphos, Cyprus. June 2020. (cancelled due to COVID-19)

[102] Symposium on Data Science and Statistics. Pittsburgh, PA. June 2020. (online)

[101] Statistical Learning and Data Science. Irvine, CA. May 2020. (cancelled due to COVID-19)

[100] Colorado State University, Department of Statistics. Fort Collins, CO. May 2020. (cancelled due to COVID-19)

[99] Random Dynamic Objects. Davis, CA. April 2020. (cancelled due to COVID-19)

[98] Texas A&M, Department of Statistics. College Station, TX. April 2020. (cancelled due to COVID-19)

[97] UT Austin, Department of Statistics. Austin, TX. April 2020. (cancelled due to COVID-19)

[96] University of Zurich. Zurich, Switzerland. April 2020. (cancelled due to COVID-19)

[95] EPFL. Lausanne, Switzerland. April 2020. (cancelled due to COVID-19)

[94] 2020 Information Theory and Applications Workshop, San Diego, CA. February 2020.

[93] ICSA International Conference. Zhejiang, China. December 2019.

[92] National Tsing Hua University. Hsinchu, Taiwan. December 2019.

[91] Workshop on High-dimensional Statistical Analysis. *(keynote speaker)* Taipei, Taiwan. December 2019.

[90] University of Illinois at Urbana-Champaign, Department of Computer Science. Champaign, IL. November 2019.

[89] Illinois Institute of Technology, Department of Applied Mathematics. Chicago, IL. November 2019.

[88] Workshop on Higher-Order Asymptotics and Post-Selection Inference. St. Louis, MO. August 2019.

[87] Symposium on Data Science and Statistics. Seattle, WA. May 2019.

[86] New England Statistics Symposium. Hartford, CT. May 2019.

[85] Analysis of Non-Euclidean Data. Davis, CA. May 2019.

[84] New York University. New York City, NY. April 2019.

[83] RIKEN Center for Advanced Intelligence. Tokyo, Japan. April 2019.

[82] Machine Learning Seminar. Chicago, IL. March 2019.

[81] University of California San Diego. San Diego, CA. November 2018.

[80] University of Illinois at Chicago. Chicago, IL. October 2018.

[79] Argon National Laboratories. Lemont, IL. October 2018.

[78] Computational strategies for large-scale statistical data analysis. Edinburgh, UK. July 2018

[77] IMS Annual Meeting on Probability and Statistics. Vilnius, Lithuania. July 2018.

[76] Conference of the International Society for Nonparametric Statistic. Salerno, Italy. June 2018.

[75] Midwest Machine Learning Symposium 2018. Chicago, IL. June 2018.

[74] Data, Learning and Inference 2018. Lanzarote, Spain. April 2018.

[73] Carnegie Mellon University, Machine Learning Department. March 2018.

[72] Oberwolfach workshop on Statistical Inference for Structured High-dimensional Models, Oberwolfach, Germany. March 2018.

[71] Workshop on Functional Inference and Machine Intelligence at ISM. Tokyo, Japan. February 2018.

[70] CMStatistics 2017. London, UK. December 2017.

[69] Allerton 2018. Urbana, IL. October 2017.

[68] Workshop on High-dimensional Statistical Analysis. *(keynote speaker)* Taipei, Taiwan. August 2017.

[67] ISI 2017. Marrakesh, Morocco. July 2017.

[66] Microsoft Research. Boston, MA. May 2017.

[65] University of California at Santa Barbara, Department of Statistics. Santa Barbara, CA. May 2017.

[64] University of Illinois at Urbana-Champaign, Coordinated Science Laboratory. Champaign, IL. April 2017.

[63] ETH Zurich, Seminar for Statistics. Zurich, Switzerland. April 2017.

[62] Carnegie Mellon University, Machine Learning Department. March 2017.

[61] Graphical Model Workshop at ISM. Tokyo, Japan. February 2017.

[60] Northwestern University, Department of Statistics. Evanston, IL. February 2017.

[59] Fudan International Conference on Data Science. Shanghai, China. December 2016.

[58] CMStatistics 2016. Sevilla, Spain. December 2016.

[57] Oxford University, Department of Statistics. Oxford, UK. November 2016.

[56] University of California at Davis, Department of Statistics. Davis, CA. November 2016.

[55] Toyota Technology Institute. Chicago, IL. October 2016.

[54] Carnegie Mellon University, Department of Statistics. Pittsburgh, PA. October 2016.

[53] Machine Learning: What's in it for Economics? Chicago, IL. September 2016.

[52] Joint Statistical Meeting 2016. Chicago, IL. August

[51] PCMI Summer Session 2016: The Mathematics of Data. Park City, UT. July 2016.

[50] 2016 ICSA Applied Statistics Symposium. Atlanta, GA. June 2016.

[49] Conference on Statistical Learning and Data Science. Durham, NC. June 2016.

[48] Michigan State University, Department of Statistics & Probability. East Lansing, MI. April 2016.

[47] Carnegie Mellon University, Machine Learning Department. March 2016.

[46] 2016 Information Theory and Applications Workshop, San Diego, CA. February 2016.

[45] Purdue University, Department of Statistics. West Lafayette, IN. January 2016.

[44] Workshop on Structured Multivariate Data. College Station, TX. January 2016.

[43] UCL Workshop on the Theory of Big Data. London, UK. January 2016.

[42] University of California, Los Angeles, Department of Statistics. Los Angelese, CA. November 2015.

[41] University of Indiana, Department of Statistics. Bloomington, IN. November 2015.

[40] INFORMS. Philadelphia, PA. November 2015.

[39] Illinois Institute of Technology, Department of Applied Mathematics. Chicago, IL. October 2015.

[38] Carnegie Mellon University, Department of Statistics. Pittsburgh, PA. September 2015.

[37] ETH, Computer Science Department, Zurich, Switzerland. June 2015.

[36] Toulouse School of Economics, Toulouse, France. June 2015.

[35] ENAR Spring Meeting, Miami, Florida. March 2015.

[34] 2015 Information Theory and Applications Workshop, San Diego, CA. February 2015.

[33] Statistics & Computational Interface to Big Data at IAS, HKUST, Hong-Kong. *(keynote speaker)* January 2015.

[32] Simons-Berkeley Research Institute, Big Data Reunion Workshop. Berkeley, CA. December 2014

[31] UT Austin, Department of Statistics and Data Sciences. Austin, TX. November 2014.

[30] University of Iowa, Department of Statistics and Actuarial Science. Iowa City, IA. November 2014.

[29] Conference on "Big Data Marketing Analytics", Chicago Booth. Chicago, IL. *(discussant)* October 2014.

[28] Cornell University, Department of Biological Statistics and Computational Biology. Ithaca, NY. October 2014.

[27] Microsoft Research, Cambridge, UK. September 2014.

[26] University College of London, The Gatsby Computational Neuroscience Unit. London, UK. September 2014.

[25] University College of London, Department of Statistics. London, UK. September 2014.

[24] Joint Statistical Meeting. Boston, MA. August 2014.

[23] ISBIS 2014/SLDM meeting on Data Mining in Business and Industry. Durham, NC. June 2014.

[22] Carnegie Mellon University, Tepper School Of Business. Pittsburgh, PA. January 2014.

[21] Georgia Tech, H. Milton Stewart School of Industrial & Systems Engineering at Georgia Tech. Atlanta, GA. January 2014.

[20] University of Washington, Computer Science Department. Seattle, WA. January 2014.

[19] University of Washington, Department of Statistics. Seattle, WA. January 2014.

[18] Simons-Berkeley Research Institute. Workshop on "Unifying Theory and Experiment for Large-Scale Networks." Berkeley, CA. November 2013

[17] University of California, San Diego, Mathematics Department. San Diego, CA. October 2013.

[16] University of Toronto, Department of Computer Science. Toronto, Canada. April 2013.

[15] Toyota Technology Institute. Chicago, IL. March 2013.

[14] Stanford University, Department of Statistics. Stanford, CA. March 2013.

[13] Colorado School of Mines, Department of Electrical Engineering and Computer Science. Golden, CO. March 2013.

[12] Columbia University, Department of Statistics. New York, NY. February 2013.

[11] Rice University, Department of Statistics. Houston, TX. February 2013.

[10] Rutgers, Department of Statistics and Biostatistics. Piscataway, NJ. February 2013.

[9] University of Chicago Booth School of Business. Chicago, IL. February 2013.

[8] Pennsylvania State University, Department of Statistics. State College, PA. February 2013.

[7] University of Illinois at Urbana-Champaign, Department of Statistics. Champaign, IL. February 2013.

[6] University of California at Davis, Department of Statistics. Davis, CA. January 2013.

[5] University of North Carolina at Chapel Hill, Department of Statistics and Operations Research. Chapel Hill, NC. January 2013.

[4] INRIA - Grenoble, November 2010

[3] SMILE - Statistical Machine Learning in Paris, October 2010

[2] INRIA - Willow Team, September 2010

[1] Facebook Inc., August 2010

PROFESSIONAL SERVICE

*Editorial Service*

| | |
|---|---|
| • Action Editor, Journal Machine Learning Research | 2021 - present |
| • Associate Editor, Journal of Computational and Graphical Statistics | 2021 - present |
| • Associate Editor, The New England Journal of Statistics in Data Science | 2021 - present |
| • Area Chair, Neural Information Processing Systems | 2018 - 2021 |
| • Area Chair, International Conference for Machine Learning | 2014 - 2021 |
| • Senior Program Committee, Artificial Intelligence and Statistics | 2015 - 2021 |
| • Senior Program Committee, International Joint Conferences on Artificial Intelligence | 2020 |

*Organizer or Co-organizer*

| | |
|---|---|
| • Recent developments in modeling of multivariate functional data<br>Invited session, Joint Statistical Meeting | 2022 |
| • Statistical Inference for Probabilistic Graphical Models with Applications<br>Invited session, Joint Statistical Meeting | 2020 |
| • Recent Developments in Score Matching with Big-Data Applications<br>Invited session, Joint Statistical Meeting | 2018 |
| • Advances in Modeling and Learning Interactions from Complex Data<br>Neural Information Processing Systems Workshop | 2017 |
| • Modern Nonparametric Methods in Machine Learning<br>Neural Information Processing Systems Workshop | 2012, 2013, 2014, 2016 |
| • Structured Sparsity: Learning and Inference<br>International Conference on Machine Learning Workshop | 2011 |
| • Machine Learning Lunch Seminar, Carnegie Mellon University | 2009 - 2013 |

*Committee service*

| | |
|---|---|
| • Program Committee, WWW Workshop on Big Graph Mining | 2014 |
| • Machine Learning Department Social Committee member | Jan 2010 - Dec 2010 |
| • Machine Learning Department Admission Committee | Dec 2009 - Apr 2010 |

*Referee Service*

• Annals of Statistics, Annals of Applied Statistics, Journal of American Statistical Association, Biometrika, Journal of Machine Learning Research, Machine Learning Journal, IEEE Transactions on Signal Processing, IEEE Transactions on Pattern Analysis and Machine Intelligence, Statistics and Computing, Statistica Sinica, Journal of Computational and Graphical Statistics, Electronic Journal of Statistics, Transactions on Knowledge and Data Engineering, Bernoulli, AIStats, NeurIPS, ICML, UAI, Marketing Science, Journal of Econometrics