Mladen Kolar

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

RESEARCH INTERESTS

Statistical machine learning
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.

GRANTS	Institute for Data, Econometrics, Algorithms and Learning (IDEAL) National Science Foundation (NSF) TRIPODS Phase II grant no. 2216912; $1,170,000 (co-PI)	Sep 2022 - Aug 2027

HONORS AND
AWARDS

2021, TUM Global Visiting Professor

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

[14] One Policy is Enough: Parallel Exploration with a Single Policy is Minimax Optimal for Reward-Free Reinforcement Learning
P. Cisneros-Velarde, B. Lyu, S. Koyejo, and M. Kolar
Technical report (May 2022). arXiv: 2205.15891 [cs.LG]

[13] Personalized Federated Learning with Multiple Known Clusters
B. Lyu, F. Hanzely, and M. Kolar
Technical report (arXiv:2204.13619) (Apr. 2022). arXiv: 2204.13619 [cs.LG]

[12] L-SVRG and L-Katyusha with Adaptive Sampling
B. Zhao, B. Lyu, and M. Kolar
Technical report (Jan. 2022). arXiv: 2201.13387 [cs.LG]

[11] 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]

[10] 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]

[9] 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]

[8] 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]

[7] 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]

[6] 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]`

[5] 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]`

[4] 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]`

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

[2] 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]`

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

PUBLICATIONS

[64] Local AdaGrad-Type Algorithm for Stochastic Convex-Concave Minimax Problems
L. Liao, L. Shen, J. Duan, M. Kolar, and D. Tao
Machine Learning Journal (to appear) (2022). arXiv: `2106.10022` `[cs.LG]`

[63] Provably Training Overparameterized Neural Network Classifiers with Non-convex Constraints
Y.-L. Chen, Z. Wang, and M. Kolar
Electronic Journal of Statistics (to appear) (2022). arXiv: `2012.15274` `[stat.ML]`

[62] An adaptive stochastic sequential quadratic programming with differentiable exact augmented lagrangians
S. Na, M. Anitescu, and M. Kolar
Mathematical Programming (June 2022). arXiv: `2102.05320`

[61] Pessimism meets VCG: Learning Dynamic Mechanism Design via Offline Reinforcement Learning
B. Lyu, Z. Wang, M. Kolar, and Z. Yang
International Conference on Machine Learning (ICML) (2022). arXiv: `2205.02450` `[cs.LG]`

[60] Dynamic Regret Minimization for Control of Non-stationary Linear Dynamical Systems
Y. Luo, V. Gupta, and M. Kolar
ACM SIGMETRICS (June 2022). arXiv: `2111.03772`

[59] Joint Gaussian Graphical Model Estimation: A Survey
K. Tsai, O. Koyejo, and M. Kolar
WIREs Computational Statistics (2022). arXiv: `2110.10281` `[stat.ME]`

[58] A Nonconvex Framework for Structured Dynamic Covariance Recovery
K. Tsai, M. Kolar, and O. Koyejo
Journal of Machine Learning Research 23(200) (2022). arXiv: `2011.05601` `[stat.ML]`

[57] FuDGE: A Method to Estimate a Functional Differential Graph in a High-Dimensional Setting
B. Zhao, Y. S. Wang, and M. Kolar
Journal of Machine Learning Research 23(82) (2022). arXiv: `2003.05402v1` `[stat.ML]`

[56] 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]`

[55] 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]`

[54] 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]`

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

[52] 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`]

[51] 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`]

[50] 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`]

[49] 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`]

[48] 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`]

[47] 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`]

[46] 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`]

[45] 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`]

[44] Direct Estimation of Differential Functional Graphical Models
B. Zhao, Y. S. Wang, and M. Kolar
Advances in Neural Information Processing Systems (NeurIPS) (2019). arXiv: `1910.09701` [`stat.ML`]

[43] Convergent Policy Optimization for Safe Reinforcement Learning
M. Yu, Z. Yang, M. Kolar, and Z. Wang
Advances in Neural Information Processing Systems (NeurIPS) (2019). arXiv: `1910.12156` [`cs.LG`]

[42] High-dimensional Varying Index Coefficient Models via Stein's Identity
S. Na, Z. Yang, Z. Wang, and M. Kolar
Journal of Machine Learning Research 20(152) (2019)

[41] Learning Influence-Receptivity Network Structure with Guarantee
M. Yu, V. Gupta, and M. Kolar
International Conference on Artificial Intelligence and Statistics (AISTATS) 2019 (2019)

[40] Partially Linear Additive Gaussian Graphical Models
S. Geng, M. Yan, M. Kolar, and S. Koyejo
International Conference on Machine Learning (ICML) (2019)

[39] Joint Nonparametric Precision Matrix Estimation with Confounding
S. Geng, M. Kolar, and O. Koyejo
Uncertainty in Artificial Intelligence (UAI) (2019)

[38] Provable Gaussian Embedding with One Observation
M. Yu, Z. Yang, T. Zhao, M. Kolar, and Z. Wang
Advances in Neural Information Processing Systems (NeurIPS) (2018)

[37] ROCKET: Robust confidence intervals via Kendall's tau for transelliptical graphical models
R. F. Barber and M. Kolar

Annals of Statistics 46(6B) (2018)

[36] Post-Regularization Inference for Time-Varying Nonparanormal Graphical Models
J. Lu, M. Kolar, and H. Liu
Journal of Machine Learning Research 18(203) (2018)

[35] Sketching meets random projection in the dual: a provable recovery algorithm for big and high-dimensional data
J. Wang, J. D. Lee, M. Mahdavi, M. Kolar, and N. Srebro
Electronic Journal of Statistics 11(2) (2017)

[34] The Expxorcist: Nonparametric Graphical Models Via Conditional Exponential Densities
A. S. Suggala, M. Kolar, and P. Ravikumar
Advances in Neural Information Processing Systems (NeurIPS) (2017)

[33] An Influence-Receptivity Model for Topic based Information Cascades
M. Yu, V. Gupta, and M. Kolar
IEEE International Conference on Data Mining (ICDM) (2017)

[32] Recovering block-structured activations using compressive measurements
S. Balakrishnan, M. Kolar, A. Rinaldo, and A. Singh
Electronic Journal of Statistics 11(1) (2017)

[31] Efficient Distributed Learning with Sparsity
J. Wang, M. Kolar, N. Srebro, and T. Zhang
International Conference on Machine Learning (ICML) (2017)

[30] Sketching Meets Random Projection in the Dual: A Provable Recovery Algorithm for Big and High-dimensional Data
J. Wang, J. Lee, M. Mahdavi, M. Kolar, and N. Srebro
International Conference on Artificial Intelligence and Statistics (AISTATS) (2017)

[29] Statistical Inference for Pairwise Graphical Models Using Score Matching
M. Yu, V. Gupta, and M. Kolar
Advances in Neural Information Processing Systems (NeurIPS) (2016)

[28] Discussion of "Coauthorship and citation networks for statisticians" [MR3592033]
M. Kolar and M. Taddy
The Annals of Applied Statistics 10(4) (2016)

[27] Inference for High-dimensional Exponential Family Graphical Models
J. Wang and M. Kolar
International Conference on Artificial Intelligence and Statistics (AISTATS) (2016)

[26] Distributed Multi-Task Learning
J. Wang, M. Kolar, and N. Srerbo
International Conference on Artificial Intelligence and Statistics (AISTATS) (2016)

[25] Learning structured densities via infinite dimensional exponential families
S. Sun, M. Kolar, and J. Xu
Advances in Neural Information Processing Systems (NeurIPS (2015)

[24] Optimal variable selection in multi-group sparse discriminant analysis
I. Gaynanova and M. Kolar
Electronic Journal of Statistics 9(2) (2015)

[23] Optimal feature selection in high-dimensional discriminant analysis
M. Kolar and H. Liu
IEEE Transactions on Information Theory 61(2) (2015)

[22] Berry-Esseen bounds for estimating undirected graphs
L. Wasserman, M. Kolar, and A. Rinaldo
Electronic Journal of Statistics 8(1) (2014)

[21] Graph estimation from multi-attribute data
M. Kolar, H. Liu, and E. P. Xing
Journal of Machine Learning Research (JMLR) 15 (2014)

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

International Conference on Machine Learning (ICML) (2013)

[19] Feature Selection in High-Dimensional Classification
M. Kolar and H. Liu
International Conference on Machine Learning (ICML) (2013)

[18] Estimating networks with jumps
M. Kolar and E. P. Xing
Electronic Journal of Statistics 6 (2012)

[17] Variance Function Estimation in High-dimensions
M. Kolar and J. Sharpnack
International Conference on Machine Learning (ICML) (2012)

[16] Consistent Covariance Selection From Data With Missing Values
M. Kolar and E. P. Xing
International Conference on Machine Learning (ICML) (2012)

[15] Marginal Regression For Multitask Learning
M. Kolar and H. Liu
International Conference on Artificial Intelligence and Statistics (AISTATS) (2012)
(oral presentation)

[14] Statistical and computational tradeoffs in biclustering
S. Balakrishnan, M. Kolar, A. Rinaldo, A. Singh, and L. Wasserman
NeurIPS 2011 Workshop on Computational Trade-offs in Statistical Learning (2011)

[13] Minimax Localization of Structural Information in Large Noisy Matrices
M. Kolar, S. Balakrishnan, A. Rinaldo, and A. Singh
Advances in Neural Information Processing Systems (NeurIPS) (2011)

[12] On Time Varying Undirected Graphs
M. Kolar and E. P. Xing
International Conference on Artificial Intelligence and Statistics (AISTATS) (2011)

[11] Union support recovery in multi-task learning
M. Kolar, J. Lafferty, and L. Wasserman
Journal of Machine Learning Research (JMLR) 12 (2011)

[10] On Sparse Nonparametric Conditional Covariance Selection
M. Kolar, A. P. Parikh, and E. P. Xing
International Conference on Machine Learning (ICML) (2010)

[9] Ultra-high Dimensional Multiple Output Learning With Simultaneous Orthogonal Matching Pursuit: Screening Approach
M. Kolar and E. P. Xing
International Conference on Artificial Intelligence and Statistics (AISTATS) (2010)

[8] Estimating time-varying networks
M. Kolar, L. Song, A. Ahmed, and E. P. Xing
The Annals of Applied Statistics 4(1) (2010)

[7] Time-Varying Dynamic Bayesian Networks
L. Song, M. Kolar, and E. P. Xing
Advances in Neural Information Processing Systems (NeurIPS) (2009)

[6] Sparsistent Learning of Varying-coefficient Models with Structural Changes
M. Kolar, L. Song, and E. P. Xing
Advances in Neural Information Processing Systems (NeurIPS) (2009)

[5] KELLER: estimating time-varying interactions between genes
L. Song, M. Kolar, and E. P. Xing
Bioinformatics 25(12) (2009)

[4] Time Varying Ising Models
M. Kolar and E. P. Xing
NeurIPS 2008 Workshop on Analyzing Graphs: Theory and Applications (2008)

[3] CSMET: Comparative Genomic Motif Detection via Multi-Resolution Phylogenetic Shadowing
P. Ray, S. Shringarpure, M. Kolar, and E. P. Xing

PLoS Computational Biology 4(6) (June 2008)

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

[1] Computer-aided document indexing system
M. Kolar, I. Vukmirović, B. Dalbelo Bašić, and J. Šnajder
Journal of computing and information technology 13(4) (2005)
(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

[127] SIAM Conference on Computational Science and Engineering. Amsterdam, Netherlands. February 2023.

[126] CMStatistics 2022. London, UK. December 2022.

[125] IMS International Conference on Statistics and Data Science. Florence, Italy. December 2022.

[124] University of Chicago, Department of Statistics. Chicago, IL. November 2022.

[123] Statistics & Machine Learning in the Big Data Era. Ann Arbor, MI. October 2022.

[122] USC Marshall, Department of Data Sciences and Operations. Los Angeles, CA. September 2022.

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

[120] 2022 ICSA China Conference. July 2022.

[119] University of Bristol, School of Mathematics. Bristol, UK. July 2022.

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

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

[116] New Advances in Statistics and Data Science. Honolulu, HI. May 2022.

[115] MBZUAI. Abu Dhabi, UAE. April 2022.

[114] University of Pennsylvania, Department of Biostatistics, Epidemiology and Informatics. Philadelphia, PA. March, 2022.

[113] Toyota Technology Institute. Chicago, IL. March 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 - 2022
- Area Chair, International Conference for Machine Learning   2014 - 2022
- Senior Program Committee, Artificial Intelligence and Statistics   2015 - 2022
- Senior Program Committee, International Joint Conferences on Artificial Intelligence   2020

Organizer or Co-organizer

- Algebraic Statistics and Our Changing World   2023
  Workshop on Algebraic Economics at Institute for Mathematical and Statistical Innovation
- Recent developments in modeling of multivariate functional data   2022
  Invited session, Joint Statistical Meeting
- Statistical Inference for Probabilistic Graphical Models with Applications   2020
  Invited session, Joint Statistical Meeting
- Recent Developments in Score Matching with Big-Data Applications   2018
  Invited session, Joint Statistical Meeting
- Advances in Modeling and Learning Interactions from Complex Data   2017
  Neural Information Processing Systems Workshop
- Modern Nonparametric Methods in Machine Learning   2012, 2013, 2014, 2016
  Neural Information Processing Systems Workshop
- Structured Sparsity: Learning and Inference   2011
  International Conference on Machine Learning Workshop
- 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, ICLR, AAAI, Marketing Science, Journal of Econometrics