

Bei Jiang

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Academic Appointments

10/2022 – Now Canada CIFAR AI Chair

05/2022 – Now Fellow, Alberta Machine Intelligence Institute (Amii)

07/2021 – Now Associate Professor, Department of Mathematical and Statistical Sciences, University of Alberta

07/2015 – 06/2021 Assistant Professor, Department of Mathematical and Statistical Sciences, University of Alberta

Education and Training

Postdoctoral Fellow Department of Biostatistics, Columbia University 2014–2015
Co-Advisors: R. Todd Ogden and Eva Petkova (New York University)

PhD in Biostatistics, University of Michigan 2009–2014
Co-Advisors: Michael Elliott and Naisyin Wang

MSc in Biostatistics, University of Alberta (UA) 2006–2008
Advisor: K.C. Carrière

BSc in Information and Computing Science, Beijing University of Technology 2000–2004

Leaves

- Fall 2022 - Summer 2023 Sabbatical
- 2017 Maternity Leave

Research Grants**Current:**

Amii RAP 03/2023-02/2024
Achieving Fairness in AI with Synthetic Data, PI: **Bei Jiang**, \$77,000 (total).

Amii RAP 03/2023-02/2024
Gaussian Differential Privacy Over Riemannian Manifold, PI: **Bei Jiang**, \$77,000 (total).

Canada CIFAR AI Chairs Program 10/2022-09/2027
Novel Analytics and Privacy Tools for Heterogeneous Health Data, PI: **Bei Jiang**, \$375,000 (total).

NSERC Alliance - Alberta Innovates Advance Program 01/2023-12/2024
Novel Statistical Integration Methods for Multi-View Data, PI: **Bei Jiang**, \$36,000 (total).

MITACS Accelerate 08/2022-07/2025
Develop Geospatial Artificial Intelligence Geodatabases and Cloud Platforms for Automating Manual Observation Associated with Wheat Production, Co-PIs: **Bei Jiang** and Joy Agnew (Olds College)
 \$480,000 (total).

NSERC Discovery Grant 04/2022-03/2027
Novel Statistical Integration Methods for Multi-View Data, PI: **Bei Jiang**, \$135,000 (total).

Canadian Statistical Sciences Institute, Collaborative Research Team Grant 01/2023-12/2025
Synthetic Data and Risk Measures for Statistical Disclosure Control, Co-PIs: **Bei Jiang** (50%), Anne-Sophie Charest, Université Laval (50%) \$210,000 (total).

NSERC Alliance Grant 05/2022-04/2025
Using Machine Learning Methods to Predict Truck Productivity in Oil Sands Mining, PI: Wei Liu, UA (50%), Co-PI: **Bei Jiang** (50%) \$375,000 (total).

Canada-UK Artificial Intelligence Initiative 02/2020-01/2024
BIAS: Responsible AI for Labour Market Equality, PI: Linglong Kong, UA (45%), Co-PIs: **Bei Jiang** (25%), Nicole Denier, UA (15%), Karen Hughes, UA (15%), \$460,000 (total).

MITACS Accelerate 03/2020-02/2024
Statistical Machine Learning Methods Applied to ATB Data for Debt Collection Optimization, Small Business Lending Decision Modelling, and Open Banking Initiatives, PI: **Bei Jiang**, \$220,000 (total).

Past:

MITACS Accelerate 12/2021-05/2023
Designing Appropriate Credit Risk Model for Big Data via Cloud Computing., PI: **Bei Jiang**, \$45,000 (total).

MITACS Accelerate 01/2022-06/2022
Organizational Life Cycle Modelling: Assessing and Aligning Financial Institution Resources and Methodology, PI: **Bei Jiang**, \$15,000 (total).

NSERC Discovery Grant 04/2016-03/2022
New Statistical Methods for Functional and Array-valued Brain Imaging Data: Joint Modelling and Statistical Machine Learning Perspectives, PI: **Bei Jiang**, \$120,000 (total), including Discovery Grant of Early Career Researcher Supplement (\$ 5,000/year)

MITACS Accelerate 07/2020-06/2021
A Principled Approach to Developing Machine Learning Models for the Synthesis of Structured Health Data, Co-PIs: **Bei Jiang** (33%), Linglong Kong (UA) (33%), and Adam Kashlak (UA) (33%), \$135,000 (total).

University of Alberta Pilot Seed Grant 05/2020-04/2021
Using Machine Learning Methods to Predict Truck Productivity in Oil Sands Mining, PI: Wei Liu, UA (50%), Co-PI: **Bei Jiang** (50%), \$30,000 (total).

MITACS Accelerate 06/2018-11/2019
Statistical Machine Learning Methods Applied to ATB Data for Credit Risk Modelling, PI: **Bei Jiang**, \$40,000 (total).

University of Alberta Faculty of Science Start-up Grant 2015-2018
PI: **Bei Jiang**, \$50,000 (total)

Honors and Awards

University of Michigan, Ann Arbor, MI, USA

- 2013: Rackham Conference Travel Award
- 2013: National Institute of Statistical Sciences Affiliate Award
- 2012: Rackham Conference Travel Award
- 2009-2012: Canada Graduate Scholarship, NSERC

University of Alberta, Edmonton, Alberta, Canada

- 2008: J Gordin Kaplan Graduate Student Award
- 2008: Statistical Society of Canada Travel Award
- 2008: The Best Consultant of the Year 2008
- 2008: Graduate Student Scholarship by Alberta Advanced Education and Technology
- 2007: Josephine M. Mitchell Graduate Scholarship

Beijing University of Technology, Beijing, China

- 2005: Excellent Graduate Student Scholarship
- 2004: Outstanding Graduate by Beijing Municipal Commission of Education
- 2004: Outstanding Bachelor Dissertation Scholarship
- 2001: Excellent Student Leader Scholarship
- 2001-2003: Excellent Student Scholarship

Publications (* indicates trainees under my sole-/co-supervision; co-first authors are underlined>)

Journal Papers:

1. **Jiang, B.**, Raftery, A., Steele, R., and Wang, N. (2023). Privacy-Preserved and High-Utility Synthesis Strategy for Risk-Based Stratified Subgroups of Canadian Scleroderma Patient Registry Data, *Annals of Applied Statistics*, invited revision submitted
2. Xie, J.* Yan, X., **Jiang, B.**, and Kong, L. (2023). Statistical inference for smoothed quantile regression with streaming data, *Journal of Econometrics*, invited revision submitted.
3. Han, D., Xie, J.* , Liu, J., Sun, L., Huang, J., **Jiang, B.**, and Kong, L. (2023). Inference on High-dimensional Single-index Models with Streaming Data, *Journal of Machine Learning Research*, invited revision submitted.
4. Xie, J.* , Shi, E.* , Shang, Z., Sang, P., **Jiang, B.**, and Kong, L. (2023). Scalable inference in functional linear regression with streaming data, *Annals of Statistics*, invited revision submitted.
5. Liu, Y., Tu, W., Bao, Y., **Jiang, B.** and Kong, L. (2023). Asymmetric Estimation for Varying-coefficient Additive model with Functional Response in Reproducing Kernel Hilbert Space, *Statistica Sinica*, invited revision submitted.
6. Li, J., Kong, L., **Jiang, B.** and Tu, W. (2023). High-dimensional Outlier Detection and Variable Selection via Adaptive Weighted Mean Regression. *Statistica Sinica*, invited revision submitted.
7. Yu, D.* , Pietrosanu, M.* , Tu, W., Mizera, I., **Jiang, B.**, Kong, L. (2023). Functional Linear Partial Quantile Regression with Guaranteed Convergence for Neuroimaging Data Analysis. *Statistics in Bioscience*, accepted.
8. Guo, W.* , Zhang, X., **Jiang, B.**, Kong, L., and Hu, Y. (2023). Wavelet-based Bayesian Approximate Kernel Method for High-dimensional Data Analysis. *Computational Statistics*, accepted.

9. Xie, H.*, Pietrosanu, M.*, Liu, Y., Tu, W., **Jiang, B.**, and Kong, L. (2023). Differentially Private Regularized Stochastic Convex Optimization with Heavy-Tailed Data. *Statistica Sinica*, accepted.
10. Wang, Y.*, **Jiang, B.** and Zhang, Z. and Kong, L., (2023). M-estimation on Varying Coefficient Model with Functional Response in Reproducing Kernel Hilbert Space. *Bernoulli*, accepted.
11. Zhang, N., Liu, P., Kong, L., **Jiang, B.**, and Huang, J-Z. (2023). Functional Linear Quantile Regression on a Two-dimensional Domain. *Bernoulli*, accepted.
12. Fan, C.*, Zhang, N.*, **Jiang, B.** and Liu, W. (2023). Using Deep Neural Networks Coupled with Principal Component Analysis for Ore Production Forecasting at Open-pit Mine Sites. *Journal of Rock Mechanics and Geotechnical Engineering*, doi: <https://doi.org/10.1016/j.jrmge.2023.06.005>.
13. Fan, C.*, Zhang, N.*, **Jiang, B.** and Liu, W. (2023). Weighted Ensembles of Artificial Neural Networks based on Gaussian Mixture Modeling for Truck Productivity Prediction at Open-Pit Mines. *Mining, Metallurgy & Exploration*, 40, 583–598.
14. Emam, K., Mosquera, L., Ding, L.*, Sharma, V., Carvalho, C., Hamilton, B., Palfrey, D., Kong, L., **Jiang, B.**, and Eurich, D. (2023). A Method for Generating Synthetic Longitudinal Health Data. *BMC Medical Research Methodology*, accepted.
15. Xie, J.*, Ding, X., **Jiang, B.**, Yan, X.*, and Kong, L. (2023). High Dimensional Model Averaging for Quantile Regression. *Canadian Journal of Statistics*, accepted.
16. Yan, X.*, Xie, J.*, Tu, W., **Jiang, B.**, and Kong, L. (2023). Scalable Inference for Individual Treatment Effect, *Statistics and Its Interface*, accepted.
17. Yu, P.*, Zhao, K., **Jiang, B.**, Petkova, E., Tarpey, T., and Ogden, R. T. (2023). Associations Between EEG-Defined Subgroups and Antidepressant Response: A Joint Mixture of Probabilistic Multilinear Principal Component Analysis Modeling Approach, *Statistics and Its Interface*, accepted.
18. Fan, C.*, Zhang, N.*, **Jiang, B.** and Liu, W. (2022). Prediction of Truck Productivity at Mine Sites using Tree-based Ensemble Models Combined with Gaussian Mixture Modelling. *International Journal of Mining, Reclamation and Environment*, 37(1): 1-21.
19. Fan, C.*, Zhang, N.*, **Jiang, B.** and Liu, W. (2022). Preprocessing Large Datasets using Gaussian Mixture Modeling to Improve Prediction Accuracy of Truck Productivity at Mine Sites. *Archives of Mining Sciences*, 67 (2022), 4, 661-680.
20. Tu, W., **Jiang, B.**, and Kong, L. (2022). Discussion on Measuring Housing Vitality from Multi-Source Big Data and Machine Learning. *Journal of American Statistical Association*, 117 (539), 1060-1062.
21. Tu, W., Fu, F., Cobzas, D., Kong, L., **Jiang, B.** and Huang, C. (2022). Low Rank plus Sparse Decomposition of fMRI Data with Application to Alzheimer’s Disease. *Frontiers in Neurosciences*, 16. <https://doi.org/10.3389/fnins.2022.826316>.
22. Jiang, Y.*, Mosquera, L., **Jiang, B.**, Kong, L., and Emam, K. (2022). Measuring Re-identification Risk Using a Synthetic Estimator to Enable Data Sharing. *PLoS ONE* 17(6): e0269097.
23. **Jiang, B.**, Raftery, A., Steele, R., and Wang, N. (2022). Balancing Inferential Integrity and Disclosure Risk via Model Targeted Masking and Multiple Imputation, *Journal of American Statistical Association*, 117(537), 52-66.

24. Pietrosanu, M.*, Kong, L., Yuan, Y., Bell, R., Letourneau, N. and **Jiang, B.** (2022). Associations between Longitudinal Gestational Weight Gain and Scalar Infant Birth Weight: A Bayesian Joint Modeling Approach. *Entropy*, 24, 232.
25. Hu, S., Alshehabi AI-Ani, J., Hughes, K., Denier, N., Konnikov, A., Ding, L.*, Xie, J.*, Hu, Y., Tarafdar, M., **Jiang, B.**, Kong, L. and Dai, H. (2022). Balancing Gender Bias in Job Advertisements with Text-Level Bias Mitigation. *Frontiers in Big Data*, Vol 5. 805713.
26. Pietrosanu, M.*, Shu, H., **Jiang, B.**, Kong, L., Heo, G. He, Q., Gilmore, J., and Zhu, H. (2021). Estimation for Bivariate Quantile Varying Coefficient Model with Application in Diffusion Tensor Imaging Data Analysis. *Biostatistics*, kxab031.
27. Liu, M.*, Pietrosanu, M.*, Kong, L., **Jiang, B.** and Zhou, X. (2021). Reproducing Kernel based Partial Functional Expectile Regression. *Canadian Journal of Statistics*, 50(1), 241-266.
28. Lee C.H., **Jiang, B.**, Nakhaei-Nejad, M., Barilla, D., Blevins, G. and Giuliani, F. (2021). Cross-Sectional Analysis of Peripheral Blood Mononuclear Cells in Lymphopenic and Non-lymphopenic Relapsing-Remitting Multiple Sclerosis Patients Treated with Dimethyl Fumarate. *Multiple Sclerosis and Related Disorders*, 52, 103003.
29. Li, C., Tong, C.L.*, Niu, D., **Jiang, B.**, Zuo, X., Cheng, L., Xiong, J., and Yang, J. (2021). Similarity Embedding Networks for Robust Human Activity Recognition. *ACM Transactions on Knowledge Discovery from Data (TKDD)*, 15(6), 1-17.
30. Pietrosanu, M.*, and **Jiang, B.** (2021). Discussion of Statistical Disease Mapping for Heterogeneous Neuroimaging Studies. *Canadian Journal of Statistics*, 49(1), 39-42.
31. Su, T., Wang, Y.*, Liu, Y., Branton, W., Asahchop, E., Power, C., **Jiang, B.**, and Kong, L. (2021). Sparse Multicategory Generalized Distance Weighted Discrimination in Ultra-High Dimensions. *Entropy*, 22(11), 1257.
32. Pietrosanu, M.*, Gao J., Kong, L., **Jiang, B.**, and Niu, D. (2021). Advanced Algorithms for Penalized Quantile and Composite Quantile Regression. *Computational Statistics*, 36(1), 333-346.
33. Vekhande, C., **Jiang, B.**, and Kate, M. (2020). Screening for Cognitive Impairment, Being Cognizant of the Liminal Deities and Demons. *Canadian Journal of Neurological Sciences*, 47(6), 731-733.
34. **Jiang, B.**, Petkova, E., Tarpey, T. and Ogden R. T. (2020). A Bayesian Approach to Joint Modeling of Matrix-valued Imaging Data and Treatment Outcome with Applications to Depression Studies. *Biometrics*, 76(1), 87-97.
35. Wang, Y.*, Kong, L., **Jiang, B.**, Zhou, X., Yu, S., Zhang, L., Heo, G. (2019). Wavelet-based LASSO in Functional Linear Quantile Regression. *Journal of Statistical Computation and Simulation*, 89(6), 1111-1130.
36. Yu, D., Zhang, L., Mizera, I., **Jiang, B.**, and Kong, L. (2019). Sparse Wavelet Estimation in Quantile Regression with Multiple Functional Predictors. *Computational Statistics and Data Analysis*, 136, 12-29.
37. Petkova, E., Tarpey, T., Ogden R. T., Ciarleglio, A., **Jiang, B.**, et. al. (2017). Statistical Analysis Plan for Stage 1 EMBARC (Establishing Moderators and Biosignatures of Antidepressant Response for Clinical Care) Study. *Contemporary Clinical Trials Communications*, 6, 22-30.

38. **Jiang, B.**, Petkova, E., Tarpey, T. and Ogden R. T. (2017). Latent Class Modeling Using Matrix Covariates with Application to Identifying Early Placebo Responders based on EEG Signals. *Annals of Applied Statistics*, 11(3), 1513-1536.
39. **Jiang, B.**, Elliott, M. R., Sammel, M. D. and Wang, N. (2016). Bayesian Model Assessments in Evaluating Mixtures of Longitudinal Trajectories and Their Associations with Cross-Sectional Health Outcomes. *Statistics and Its Interface*, 9(2), 183-201.
40. **Jiang, B.**, Sammel, M. D., Freeman, E. W. and Wang, N. (2015). Bayesian Estimation of Associations between Identified Longitudinal Hormone Subgroups and Age at Final Menstrual Period. *BMC Medical Research Methodology*, 15(1), 1-10.
41. **Jiang, B.**, Elliott, M. R., Sammel, M. D. and Wang, N. (2015). Joint Modeling of Cross-Sectional Health Outcomes and Longitudinal Predictors via Mixtures of Means and Variances. *Biometrics*, 71(2), 487-497.
42. **Jiang, B.**, Wang, N., Sammel, M. D. and Elliott, M. R. (2015). Modeling Short- and Long-Term Characteristics of Follicle Stimulating Hormone as Predictors of Severe Hot Flashes in Penn Ovarian Aging Study. *Journal of the Royal Statistical Society: Series C*. 64(5), 731-753.
43. **Jiang, B.** and Carrière, K. C. (2014). Smoothing Age-Period-Cohort Models: A Generalized Additive Model Approach. *Statistics in Medicine*, 33(4), 595-606.
44. Sadowski, D. C., Ackah, F., **Jiang, B.** and Svenson, L. W. (2010). Achalasia: Incidence, Prevalence and Survival. A Population Based Study. *Nerogastroenterology and Motility*. 22(9), 256-261.
45. Cree, M., Lalji, M., **Jiang, B.** and Carrière, K. C. (2009). Under-reporting of Compensable Mesothelioma in Alberta. *American Journal of Industrial Medicine*, 52(7), 526-533.
46. Cree, M., Lalji, M., **Jiang, B.**, Carrière, K. C., Beach, J. and Kamruzzaman, A. (2009). Explaining Alberta's Rising Mesothelioma Rates. *Chronic Diseases in Canada*, 29(4), 144-152.

Conference Proceedings:

44. Zhao, S., Cui, W., **Jiang, B.**, Kong, L., and Yan, X. (2024). Responsible Bandit Learning via Privacy-Protected Mean-Volatility Utility. *Proceedings of the 38th AAAI Conference on Artificial Intelligence 2024* (acceptance rate: 21.3%).
45. Jiang, Y.*, Liu, Y., Yan, X., Charest, A.-S., Kong, L., and **Jiang, B.** (2024). Analysis of Differentially Private Synthetic Data: A Measurement Error Approach, *Proceedings of the 38th AAAI Conference on Artificial Intelligence 2024* (acceptance rate: 21.3%).
46. Jiang, Y.*, Chang, X., Liu, Y., Ding, L.*, Kong, L. and **Jiang, B.** (2023). Gaussian Differential Privacy on Riemannian Manifolds, *Proceeding of the 37th Conference on Neural Information Processing Systems (NeurIPS)* (acceptance rate: 26.1%). .
47. Liu, P., Liu, Y., Zhu, R., Kong, L., **Jiang, B.** and Niu, D. (2023). Optimal Smooth Approximation for Quantile Matrix Factorization, *SIAM International Conference on Data Mining (SDM) 2023* (acceptance rate: 27.4%).
48. Feng, W., Li, X., Kong, L., **Jiang, B.** and Yan, X.* (2023). P-learning for Two-sided Markets, *KDD-23 Workshop on Decision Intelligence and Analytics for Online Marketplaces* (selected as an oral spotlight).

49. Liu, Y., Hu, Q., Ding, L.*, **Jiang, B.** and Kong, L. Online Local Differential Private Quantile Inference via Self-normalization, *Proceedings of the 40th International Conference on Machine Learning (ICML) 2023* (acceptance rate: 27.9%).
50. Chen, X., Diao, D.*, Chen, H., Yao, H., Piao, H., Sun, Z., Yang, Z., Goebel, R., **Jiang, B.**, and Chang, Y. (2023). The Sufficiency of Off-policyness and Soft Clipping: PPO is still Insufficient according to an Off-policy Measure, *Proceedings of the 37th AAAI Conference on Artificial Intelligence 2023* (acceptance rate: 19.6%).
51. Liu, M.*, Ding, L.*, Yu, D., Liu, W., Kong, L. and **Jiang, B.** (2022). Conformalized Fairness via Quantile Regression, *Proceeding of the 36th Conference on Neural Information Processing Systems (NeurIPS)* (acceptance rate: 25.6%).
52. Liu, Y., Sun, K., **Jiang, B.**, and Kong, L. (2023). Identification, Amplification and Measurement: A Bridge to Gaussian Differential Privacy, *Proceeding of the 36th Conference on Neural Information Processing Systems (NeurIPS)* (acceptance rate: 25.6%).
53. Wang, Y.*, Pan, B., Tu, W., Liu, P., **Jiang, B.**, Gao, C., Lu, W. Jiu, S. and Kong, L. (2022). Sample Average Approximation for Dependent Data: Performance Guarantee and Tractability. *Proceedings of the 36th AAAI Conference on Artificial Intelligence* (acceptance rate: 15%).
54. Ding, L.*, Yu, D.*, Xie, J.*, Guo, W.*, Hu, S., Liu, M.*, Kong, L. Dai, H., Bao, Y., **Jiang, B.** (2022). Word Embeddings via Causal Inference: Gender Bias Reducing and Semantic Information Preserving. *Proceedings of the 36th AAAI Conference on Artificial Intelligence* (acceptance rate: 15%).
55. Sun, K., Wang, Y.*, Liu, Y., Zhao, Y., Pan, B., Jui, S., **Jiang, B.** and Kong, L. (2021). Damped Anderson Mixing for Deep Reinforcement Learning: Acceleration, Convergence, and Stabilization. *Proceeding of the 45th Conference on Neural Information Processing Systems (NeurIPS)* (acceptance rate: 25%).
56. Tu, W., Liu, P*., Liu, Y., Kong, L., Li, G., **Jiang, B.**, Yao, H., and Jui, S. Nonsmooth Low-rank Matrix Recovery: Methodology, Theory and Algorithm. *Proceedings of the Future Technologies Conference (FTC) 2021*, 848-862.
57. Li, C., Niu, D., **Jiang, B.**, Zuo, X., and Yang, J. (2021). Meta-HAR: Federated Representation Learning for Human Activity Recognition. *The Web Conference (WWW) 2021* (acceptance rate: 20.6%).
58. Hu, Y., Liu, P.*, Ge, K., Kong, L., **Jiang, B.** and Niu, D. (2020). Learning Privately over Distributed Features: An ADMM Sharing Approach. *NeurIPS-SpicyFL 2020*.
59. Tu, W., Liu, P.*, Zhao, J., Liu, Y., Kong, L., Li, G., **Jiang, B.**, Tian, G., and Yao, H. (2019). M-estimation in Low-rank Matrix Factorization: a General Framework. *2019 IEEE International Conference on Data Mining (ICDM)*, 568-577 (acceptance rate: 9.08%).
60. Yao, H., Zhu, D., **Jiang, B.**, and Yu, P*. (2019). Negative Log Likelihood Ratio Loss for Deep Neural Network Classification, *Proceedings of the Future Technologies Conference (FTC) 2019*, 276-282.

Book Chapters:

59. Konnikov, A., Rets, I., Hughes, K., Alshehabi Al-Ani, J., Denier, N., Ding, L., Hu, S., Hu, Y., **Jiang, B.**, Kong, L., Tarafdar, M. and Yu, D. (2022). Responsible AI for Labour Market Equality (BIAS). In: How to Manage International Multidisciplinary Research Projects. Edward Elgar, Cheltenham.

60. Wang, Y.*, Lai, T., **Jiang, B.**, Kong, L. and Zhang Z. (2022). Functional Linear Regression for Partially Observed Functional Data, Advances and Innovations in Statistics and Data Science, Springer Book Series.

Patents

- Jiang, Y.*, **Jiang, B.**, Kong, L. and Emam, EI K. Re-identification Risk Assessment Using a Synthetic Estimator. 2022. US Patent App. 17/400,484.

Presentations

Invited Talks/Posters:

- Seminar, Department of Statistics, Beijing Jiaotong University 11/2023
- Seminar, Department of Statistics, Beijing University of Technology 11/2023
- Seminar, Department of Statistics, Renmin University 11/2023
- Workshop on Contextual Integrity for Differential Privacy, Kelowna, BC 08/2023
- Model-based Clustering Working Group, Carnegie Mellon University, Pittsburg, PA 07/2023
- ICSA Applied Statistics Symposium, Ann Arbor, MI 06/2023
- Upper Bound, Edmonton, AB 05/2023
- Seminar, Department of Statistics, University of Florida, Gainesville, FL 04/2023
- Virtual Seminar, Department of Statistics, Shandong University 03/2023
- Seminar, International Cooperation and Methodology Innovation Centre, Statistics Canada, Ottawa, ON 02/2023
- Seminar, Department of Mathematics and Statistics, McGill University, Montreal, QC 01/2023
- Amii Weekly AI Seminar, Edmonton, AB 10/2022
- Canadian AI Federated Learning Workshop, Toronto, ON 10/2022
- Panel discussion, Caucus for Women in Statistics, Virtually 10/2022
- Annual Meeting of Alberta Statisticians, Edmonton, AB 09/2022
- (session canceled due to Covid related reasons) 2022 Joint Statistical Meetings 08/2022
- International Chinese Statistical Association Canada-Chapter Symposium, Banff, AB 07/2022
- Seminar, Faculty of Pharmaceutical Sciences, University of British Columbia 06/2022
- Statistical Society of Canada Annual Meeting, Virtually 06/2022
- Virtual Seminar, Department of Population Health, New York University 04/2022
- Virtual Seminar, Department of Statistics, Nankai University 04/2022
- Virtual Seminar, Department of Epidemiology, Biostatistics and Occupational Health, McGill University 04/2022
- 2022 AAAS Annual Meeting, Virtually 02/2022
- Webinar Series, CANSSI Saskatchewan Health Science Collaborating Centre 01/2022
- Virtual Seminar, Department of Statistics and Actuarial Science, University of Waterloo 01/2022
- Virtual Seminar, Department of Statistics, Shangdong University 01/2022
- Virtual Seminar, Department of Statistics, Jiangxi University of Finance and Economics 12/2021
- Virtual Seminar, Department of Mathematics, Statistics and Computer Science, University of Illinois at Chicago 11/2021
- 2021 ICSA Applied Statistics Symposium, Virtually 09/2021
- 2021 Joint Statistical Meetings, Virtually 08/2021
- 2021 WNAR/IMS/JR Meeting, Virtually 06/2021
- Virtual Seminar, Department of Mathematics, Nanjing University, Nanjing, China 03/2021
- Virtual Seminar, Department of Biostatistics, University of Toronto, Toronto, ON 12/2020

- The 11th ICSA International Conference, Hangzhou, China 12/2019
- Department of Statistics, Capital University of Economics and Business, Beijing, China 12/2019
- Department of Statistics and Actuarial Science, University of Waterloo, Waterloo, ON 11/2019
- Department of Biostatistics, University of Toronto, Toronto, ON 11/2019
- Invited session, Joint Statistical Meetings, Denver, CO 08/2019
- Model-based Clustering Working Group, Vienna University of Economics and Business 07/2019
- Workshop on Perspectives On High-dimensional Data Analysis, Uppsala, Sweden 06/2019
- Invited session, Statistical Society of Canada Annual Meeting, Calgary, AB 05/2019
- Big Data and Information Analytics, Houston, TX 12/2018
- International Conference of the ERCIM WG on Computing and Statistics, Pisa, Italy 12/2018
- Department of Statistics & Actuarial Science, University of Hong Kong, Hong Kong 12/2018
- Model-based Clustering Working Group, Ann Arbor, MI, 08/2018
- Statistical Society of Canada Annual Meeting, Montreal, QC 06/2018
- The Conference on Statistical Learning and Data Science, New York, NY 06/2018
- Workshop on Perspectives On High-dimensional Data Analysis, Marrakesh, Morocco 04/2018
- Department Seminar, Nanjing Audit University, Nanjing, China 12/2016
- Tsinghua Sanya International Mathematics Forum, Sanya, China 12/2016
- The 10th ICSA International Conference, Shanghai, China 12/2016
- The Nonparametric Statistics Workshop, University of Michigan 10/2016
- Model-based Clustering Workshop, Paris, France 07/2016
- Invited session, Joint Statistical Meetings, Chicago, IL 08/2016
- The 4th Institute of Mathematical Statistics Asia Pacific Rim Meeting, Hong Kong 06/2016
- Statistical Society of Canada Annual Meeting, St. Catharines, ON 06/2016
- Workshop on Perspectives On High-dimensional Data Analysis, Toronto, ON 05/2016
- Workshop on Math. and Stat. Challenges in Neuroimaging Data Analysis, Banff, AB 02/2016
- The 8th Computational and Methodological Statistics (CMStatistics), London, UK 12/2015
- The 37th Annual Meeting of Alberta Statisticians, University of Calgary 10/2015
- International Workshop on Perspectives On High-dimensional Data Analysis, Victoria, BC 08/2015
- International Chinese Statistical Association Canada-Chapter Conference, Calgary, AB 08/2015
- IMS-China International Conference on Statistics and Probability, Kunming, Yunnan, China 07/2015
- FDA Working Group, Department of Biostatistics, Columbia University 09/2014
- The 16th Meeting of IMS New Researchers in Statistics and Probability, Harvard University 07/2014
- Workshop on Nonparametric Estimation and Functional Data, Oregon State University 06/2014
- Division of Epidemiology, Biostatistics, and Environmental Health, University of Memphis 04/2014
- Department of Biostatistics, University of Texas MD Anderson Cancer Center 03/2014
- Department of Statistics at the University of Missouri 03/2014
- Biostatistics Division of Cancer Epidemiology and Genetics, National Cancer Institute 02/2009
- The 29th Alberta Statisticians Meeting, Calgary, AB 10/2009

Contributed Talks/Posters:

- The Joint Statistical Meetings, Seattle, WA 08/2015
- Annual Thomas R. Ten Have Symposium, Columbia University, New York, NY 05/2015
- ENAR Spring Meeting, Baltimore, MD 03/2014
- The Joint Statistical Meetings, Montreal, QC 08/2013
- A Symposium in Honor of Jack Kalbfleisch, University of Michigan, Ann Arbor, MI 09/2012
- The Joint Statistical Meetings, San Diego, CA 07/2012
- Michigan Student Symposium in Statistical Science, Ann Arbor, MI 04/2012
- Prevention Science and Methodology Group Seminar, University of Miami, Miami, FL. 04/2012

- ENAR Spring Meeting, Washington, DC 04/2012
- The Joint Statistical Meetings, Denver, CO 08/2008
- Annual Meeting of Statistical Society of Canada, Ottawa, ON 05/2008
- Western Canadian Conference for Young Researchers in Mathematics and Statistics, Calgary, AB 05/2007

Workshops

- Workshop on Contextual Integrity for Differential Privacy, BIRS-UBCO 08/2023
- Model-based Clustering Working Group, Vienna University of Economics and Business 07/2019
- Workshop on Statistical Analysis of Large Administrative Health Databases, BIRS 02/2019
- Model-based Clustering Working Group, University of Michigan 08/2018
- Model-based Clustering Working Group, Université Paris Descartes 07/2016
- Workshop on Mathematical and Statistical Challenges in Neuroimaging Data Analysis, BIRS 02/2016
- Challenges in Computational Neuroscience (CCNS) Opening Workshop, SAMSI 08/2015
- Challenges in Computational Neuroscience (CCNS) Summer School, SAMSI, 07/2015
- 16th Meeting of New Researchers in Statistics and Probability, Harvard University 07/2014
- Neuroimaging Data Analysis Workshop, SAMSI 06/2013

Courses Taught at University of Alberta

- Winter 2022** STAT 590 Statistical Consulting
- Fall 2021** STAT 378 Applied Regression Analysis
STAT 437 Applied Statistical Methods
- Winter 2021** STAT 590 Statistical Consulting
- Fall 2020** STAT 378 Applied Regression Analysis
STAT 437 Statistical Methods for Applied Research
- Winter 2020** STAT 575 Multivariate Analysis
STAT 590 Statistical Consulting
- Fall 2019** STAT 562 Discrete Data Analysis
- Winter 2019** STAT 575 Multivariate Analysis
STAT 590 Statistical Consulting
- Fall 2018** STAT 562 Discrete Data Analysis
- Winter 2018** STAT 590 Statistical Consulting
- Fall 2017** STAT 578 Regression Analysis
STAT 378/502 Applied Regression Analysis
- May 2016** One-day Workshop on Statistics at Dept of Medical Microbiology and Immunology
(with Linglong Kong)
- Winter 2016** STAT 575 Multivariate Analysis

Training of Highly Qualified Personnel (HQP)

Postdoc Research Fellow

- Abdoullahi Diasse, (sole-advisor), 2023-now.
- Pankaj Uttam Bhagwat, (co-advisor), 2023-now.
- Vahid Tadayon, (co-advisor), 2023-now.
- Yan Cui, (advisor), 2023-now.
- Junxi Zhang, (advisor), 2023-now.
- Yixin Han, (co-advisor), 2023-now.
- Jinhao Xie (co-advisor), 2021-now.
- Omer Ugurlu, Mining Engineering (co-advisor), 2022-2023
- Xiaodong Yan (co-advisor), 2021-2022. Associate Professor, Shandong University, China.
- Wenxing Guo (co-advisor), 2020-2022. Lecturer at University of Essex, UK.
- Dengdeng Yu (sole-advisor), 9/2020-12/2020. Assistant Professor at University of Texas at San Antonio.
- Yafei Wang (co-advisor), 2019-2022. Lecturer at University of Essex, UK.
- Peng Liu (co-advisor), 11/2017-12/2018. Lecturer at University of Kent, UK.

Ph.D. Thesis Advisor/Co-Advisor

- Bo Pan, (co-advisor), 2023-now.
- Enze Shi, (co-advisor), 2022-now.
- Yangdi Jiang, (sole-advisor), 2021-now.
- Ce Zhang, (co-advisor), 2021-now.
- Chengkai Fan, Mining Engineering (co-advisor), 2020-2023.
- Na Zhang (co-advisor), 2019-now.
- Meichen Liu (co-advisor), 2019-now.
- Lisa Shulman (co-advisor), 2019-now; supported by NSERC CGS D scholarship.
- Matthew Pietrosanu (co-advisor), 2019-now; supported by NSERC CGS D scholarship.
- Lei Ding (co-advisor), 2018-now.
- Peng Yu (sole-advisor), 2017-now.
- Yafei Wang (co-advisor; visiting CSC Phd student), 2017-2018. Assistant Professor at University of Alberta.

Master's Thesis Advisor/Co-Advisor

- Connor Mitchell (co-advisor), 2023-now
- Canzhu Song (co-advisor), 2023-now
- Yangdi Jiang (sole-advisor), 2019-2021. PhD student, U of Alberta
- Carrie Tong (sole-advisor), 2019-2022. Data Scientist, Telus.
- Yue Wang (sole-advisor), 2018-2020. Won Dr Paul Somerville Graduate Scholarship Winter 2020. Data Scientist, Thinking Capital.
- Matthew Pietrosanu (co-advisor), 2017-2019; supported by NSERC PGS D scholarship. First position: PhD student at U of A.
- Lisa Shulman (co-advisor), 2017-2019; supported by NSERC PGS D scholarship. First position: PhD student at U of A.

Undergraduate Project Advisor

- Jianfeng Wang, 2022.

- Anna Feng, 2021. First position: MSc student at Western University.
- Yue Wang, 2018. First position: MSc student at U of A.
- Yichen Wen, 2019 (Poster received a travel award to attend University of Hong Kong International Conference of Undergraduate Research in Science, July 2019). First position: MSc student at University of Waterloo.
- Matthew Pietrosanu, 2017. First position: MSc student at U of A.
- Lisa Shulman, 2016. First position: MSc student at U of A.

Course-based Master's Project Advisor

- Riski Adianto, 2020-2023.
- Qinyuan Du, 2021-2023
- Yuling Feng, 2020-2022.
- Dongcui Diao, 2019-2022
- Hengrui Yang, 2019-2021; won First place in 2020 SSC Annual meeting Case Study 1: Predicting hourly electricity demand in Ontario, together with other team members <https://ssc.ca/en/node/10270>.
- Danyi Liu, 2019-2021; won First place in 2020 SSC Annual meeting Case Study 1: Predicting hourly electricity demand in Ontario, together with other team members <https://ssc.ca/en/node/10270>. First position: data scientist at Ant Group, China.
- Jingyi Yan, 2018-2019; won Second place/honorary mention in 2019 SSC Annual meeting Case Study 1: Counting Cells from Microscopic Images, together with other team members. First position: data scientist at ATB Financial, Edmonton, AB.
- Ruiqi An, 2016-2017. First position: data scientist at Deloitte, Toronto, ON.
- Cheng Su, 2015-2016. First position: data scientist at Ernst & Young, Toronto, ON.

Ph.D. Thesis Committees Served as a Member

- Neha Sharma, in progress (Advisor: Yaozhong Hu).
- Weston Roda, in progress (Advisors: Michael Li and Chris Power).
- Housam Babiker, graduated in 2023 (Advisor: Randy Goebel).
- Zhang, Junxin, graduated in 2023 (Advisor: Yaozhong Hu).
- Jane Ng, graduated in 2020 (Advisor: David Olson, Faculty of Medicine & Dentistry).
- Su Hwan Kim, graduated in 2019 (Advisor: KC Chough).

Ph.D. Thesis External Examiner

- Yasin Charvadeh (Advisor: Grace Yi), Western University
- Ying Zhou (Advisors: Linbo Wang and Dehan Kong), University of Toronto

Master's Thesis Committees Served as a Member

- Shi, Haiyi, graduated in 2023 (Advisor: Yaozhong Hu).
- Siting Wang, graduated in 2022 (Advisor: Adam Kashlak).
- Paul McLaughlin, graduated in 2021 (Advisors: Adam Kashlak and Brian Franczak).
- Shuangming Yang, graduated in 2019 (Advisor: Yaozhong Hu).
- Fahimeh Moradi, graduated in 2016 (Advisor: Irina Dinu).
- Nadezda Frolova, graduated in 2016 (Advisors: Doug Wiens and Ivor Cribben).
- Berhanu Wubie, graduated in 2016 (Advisor: Giseon Heo).
- Yi Zhou, graduated in 2016 (Advisor: Giseon Heo).
- Huiting Hu, graduated in 2016 (Advisor: Mike Kouritzin).

- Fahimeh Moradi, graduated in 2016 (Advisor: Irina Dinu).
- Box Liu, graduated in 2015 (Advisor: Rohana J. Karunamuni).
- Yunan Zhu, graduated in 2015 (Advisor: Ivor Cribben).
- Boyko Zlatev, graduated in 2015 (Advisor: Ivan Mizera).
- Wei Tu, graduated in 2015 (Advisor: Rohana J. Karunamuni).

Professional Services

Journal Referee: Journal of American Statistical Association, Biometrika, Annals of Applied Statistics, Biometrics, Canadian Journal of Statistics, Statistics in Medicine, Journal of Applied Statistics, Computational Statistics, Journal of Royal Statistical Society, series C, Technometrics, Computational Statistics and Data Analysis, Canadian Journal of Statistics, IEEE International Conference on Intelligent Transportation Systems, NeurIPS, ICML, AAI, ICLR.

Grant Review: NSERC Discovery Horizons, NSERC Discovery Grant, Mitacs, PolicyWise for Children & Families, Vienna Science and Technology Fund

Co-Local Organizer: 2018 Western North American Region of the International Biometric Society Conference

Committee Service

- Statistical Society of Canada EDI and Women in Statistics Committee, Member 09/2023-Present
- Statistical Society of Canada Board of Directors, Regional Representative 07/2022-Present
- CANSSI Showcase Organizing Committee, Member 01/2022-Present
- North America Machine Learning, Optimization and Statistics Symposium Poster Award Committee, Member 06/2023-06/2023
- ASA Statistical Imaging Session, Secretary 07/2021-06/2023
- Statistical Society of Canada Student Research Award Committee, Member 07/2021-06/2023
- Innovation Grant Committee, Women and Children's Health Research Institute 2016

Sessions Organized at Professional Meetings

- Organizer and chair, invited session on *Bridge the gap: Differential Privacy and Statistical Analysis*, Joint Statistical Meetings, Portland, OR 08/2024
- Organizer and chair, invited session on *New Advancements in Formal Privacy Methods and Synthetic Data Generation*, 2024 SSC Annual Meeting, St. John's, NL 06/2024
- Organizer and chair, invited session on *Overcoming Data Privacy Challenges*, ICSA Applied Statistics Symposium, Ann Arbor, MI 06/2023
- Co-organizer, invited one and half-day workshop on *Bridge the gap between Differential Privacy and Statistical Analysis*, Upper Bound Workshop, Edmonton, AB 05/2023
- Organizer, invited session on *Overcoming Health Data Privacy Challenges*, International Conference on Health Policy Statistics, Scottsdale, AZ 01/2023
- Organizer, invited session on *Challenges in Modern Data Analysis and Reproducibility*, ICSA Canada Chapter Symposium, Banff, AB 07/2022
- Organizer, invited session on *Advancing Data Privacy Preserving Methodologies*, ICSA Canada Chapter Symposium, Banff, AB 07/2022
- Organizer, invited session on *Statistical Disclosure Control Methods for Privacy*, Virtual 2022 SSC Annual Meeting 06/2022

- Organizer, invited session on *Data Privacy: Statisticians' Perspective*, Joint Statistical Meetings, Seattle, CO 08/2021
- Organizer, invited session on *Advances in Statistical Disclosure Control Methodology*, Joint Statistical Meetings, Denver, CO 08/2019
- Organizer, invited session on *Advances in Model-based Clustering of Complex Data*, SSC Annual Meeting, Calgary, AB 05/2019
- Organizer and chair, invited session on *New Developments of Dimension Reduction in Integrating Big and Complex Data*, SSC Annual Meeting, Montreal, QC 06/2018
- Organizer and chair, invited session on *Statistical Methods for Complex Biomedical Data*, WNAR Annual Meeting, Edmonton, AB 06/2018
- Organizer, invited session on *New Methods for Analyzing Complex and High Dimensional data*, ICSA-Canada Chapter Symposium, Calgary, AB 08/2017
- Organizer and chair, invited session on *Emerging Statistical Issues in Clinical Research*, ICSA International Conference, Shanghai, China 12/2016
- Organizer and chair, invited session on *Precision Medicine: Statistical Challenges and Opportunities*, ENAR Spring Meeting, Austin, TX 02/2016

Service at the University of Alberta:

- 2023-now, The MSc in Biostatistics program committee collaborated with [Experis](#)
- 2023-now, Fellow Membership Committee at Alberta Machine Intelligence Institute
- 2022-now, Faculty of Medicine Clinical Trials Advisory Committee
- 2023-now, Department Colloquium Organizing Committee
- 2021-2022, Faculty of Science Black Excellence Hiring Committee
- 2021-2022, Department Awards Committee (Undergrads)
- 2019-2020, Department Teaching Awards Committee
- 2018-2019, Director, Training and Consulting Centre
- 2018-2019, Stat Honor Advisor
- 2015-2017, 2018-2019, Organizer and Chair of Statistics seminar
- 2016-2017, 2018-2019, 2019-2020, Member of Hiring/Search Committee

Outreach Activities

- Invited guest lecturer on Data Privacy at Data Science Bootcamp, University of Saskatoon 06/2023
- Interviewed by U of A Science Contours Magazine to discuss [fairness and privacy in AI](#). 09/2022
- Interviewed by Folio for a story featuring our 2021 AAAI conference paper on [removing gender bias in natural language processing](#). 07/2022
- Interviewed by Dr. Matthew R. Francis from SIAM News for [a featured article titled "Protecting Privacy with Synthetic Data"](#). 03/2022
- Interviewed by Faculty of Science for the alumni magazine Science Contours featuring my [research partnerships](#) with the financial industry. 06/2020
- Lead a team of graduate students to participate 2019 SSC Case Studies in Data Analysis 05/2019
- Judge of 2019 SSC Case Studies in Data Analysis 05/2019

Professional Memberships

- 2019-present: Caucus for Women in Statistics
- 2015-present: Statistical Society of Canada
- 2011-present: Eastern North American Region, International Biometric Society

- 2008-present: American Statistical Association

Last updated Dec 31, 2023.