Blair Bilodeau

Contact Information

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Degrees

2023 *(Exp.)*	Ph.D.	Statistical Sciences, University of Toronto
		Committee: Daniel Roy (Advisor), Nancy Reid, Ting-Kam Leonard Wong
2018	H.B.Sc.	Financial Modelling, University of Western Ontario

Professional Affiliations and Employment

2022	Rising Star, University of Chicago Data Science Institute, Chicago, Illinois
2022	Research Intern, Google Brain, Seattle, Washington
2022	Visiting Student, Simons Institute for the Theory of Computing, Berkeley, California
2020	Visiting Student, Institute for Advanced Study, Princeton, New Jersey
2019–	Graduate Student, Vector Institute, Toronto, Ontario
2017–18	Undergraduate Researcher, University of Western Ontario, London, Ontario
2016	Risk Research Intern, London Life, London, Ontario
2015	Data Analyst Intern, Bell Canada, London, Ontario

Research Grants

2022	1,800 CAD	School of Graduate Studies Conference Travel Grant
2022	8,000 CAD	Centre for International Experience Award+
2021	750 USD	Institute of Mathematical Statistics Hannan Graduate Student Travel Award
2020–22	18,000 CAD	Vector Institute Research Grant
2020	6,000 CAD	NSERC Michael Smith Foreign Study Supplement
2019–22	105,000 CAD	NSERC Alexander Graham Bell Canada Graduate Scholarship – Doctoral
2018–19	17,500 CAD	NSERC Alexander Graham Bell Canada Graduate Scholarship – Master's
2018–19	15,000 CAD	Queen Elizabeth II Graduate Scholarship in Science and Technology (*Declined*)
2017–18	9,000 CAD	NSERC Undergraduate Student Research Awards

Honours and Awards

2022	NeurIPS Scholar Award
2022	NeurIPS Top Reviewer Award
2022	AISTATS Top 10% Reviewer Award
2021	Dept. of Statistical Sciences Doctoral Early Research Excellence Award
2020	Dept. of Statistical Sciences Student Ambassador Award
2020	New York Academy of Sciences Machine Learning Symposium Best Poster Award
2018	E. F. and F. W. Burton Graduate Scholarship
2017	Robert and Ruth Lumsden Scholarship in Science
2017	Borwein Memorial Prize
2014–18	University of Western Ontario Continuing Admission Scholarship

Publications

*Shared first authorship; [A] Alphabetical

1. [A]**B. Bilodeau**, A. Stringer, Y. Tang. (2022). Stochastic Convergence Rates and Applications of Adaptive Quadrature in Bayesian Inference. **Journal of the American Statistical Association**.

2. **B. Bilodeau**, L. Wang, D. M. Roy. (2022). Adaptively Exploiting d-Separators with Causal Bandits. **Neural Information Processing Systems (Oral)**.

3. *J. Negrea, ***B. Bilodeau**, N. Campolongo, F. Orabona, D. M. Roy. (2021). Minimax Optimal Quantile and Semi-Adversarial Regret via Root-Logarithmic Regularizers. **Neural Information Processing Systems**.

4. **B. Bilodeau**, D. J. Foster, D. M. Roy. (2020). Tight Bounds on Minimax Regret Under Logarithmic Loss via Self-Concordance. **International Conference on Machine Learning**.

5. **B. Bilodeau**, D. A. Stanford. (2022). High-Priority Expected Waiting Times in the Delayed Accumulating Priority Queue with Applications to Health Care KPIs. **INFOR: Information Systems and Operational Research**.

6. **B. Bilodeau**, D. A. Stanford, M. Goldszmidt, A. Appleton. (2019). Simulated Co-location of Patients Admitted to an Inpatient Internal Medicine Teaching Unit: Potential Impacts on Efficiency and Physician-Nurse Collaboration. **INFOR: Information Systems and Operational Research**.

PREPRINTS

1. **B. Bilodeau**, N. Jaques, P. W. Koh, B. Kim. (2022). Impossibility Theorems for Feature Attribution. **arXiv:2212.11870**.

2. **B. Bilodeau**, Y. Tang, A. Stringer. (2022). On the Tightness of the Laplace Approximation for Statistical Inference. **arXiv:2210.09442**.

3. *A. Stringer, ***B. Bilodeau**. (2022). Fitting Generalized Linear Mixed Models using Adaptive Quadrature. **arXiv:2202.07864**.

4. **B. Bilodeau**, D. J. Foster, D. M. Roy. (2021). Minimax Rates for Conditional Density Estimation via Empirical Entropy. **arXiv:2109.10461**.

5. ***B. Bilodeau**, *J. Negrea, D. M. Roy. (2020). Relaxing the I.I.D. Assumption: Adaptively Minimax Optimal Regret via Root-Entropic Regularization. **arXiv:2007.06552**.

ADDITIONAL SCHOLARLY WORK

B. Bilodeau. (2022). Blair Bilodeau's Contribution to the Discussion of 'Assumption-Lean Inference for Generalised Linear Model Parameters' by Vansteelandt and Dukes. **Journal of the Royal Statistical Society: Series B**.

CONTRIBUTED AND INVITED TALKS/SEMINARS/COLLOQUIA/WORKSHOPS

Adaptive Sequential Decision Making and Uncertainty Quantification
Jan	2022	University of Alberta: Mathematical and Statistical Sciences Seminar **(Invited)**
Jan	2022	University of Michigan: Statistics Seminar **(Invited)**
Jan	2022	University of Waterloo: Statistics and Actuarial Science Seminar **(Invited)**

Adaptively Exploiting d-Separators with Causal Bandits
Dec	2022	International Conference on Computational and Methodological Statistics **(Invited)**
Nov	2022	University of Chicago Rising Stars in Data Science Workshop
June	2022	Statistical Society of Canada Annual Meeting: Oral Session
May	2022	University of Toronto Statistical Sciences Research Day: Oral Session
May	2022	Simons Institute for the Theory of Computing: Statistical Theory Reading Group
Mar	2022	Carnegie Mellon University: Zachary Lipton Lab Meeting **(Invited)**

Minimax Rates for Conditional Density Estimation via Empirical Entropy
  Sep 2022   CREST–CMAP Weekly Seminar **(Invited)**
  June 2022   Institute of Mathematical Statistics Annual Meeting: Oral Session
  Aug 2021   American Statistical Association Joint Statistical Meetings: Speed Session
  June 2021   Statistical Society of Canada Annual Meeting: Oral Session
  Apr 2021   University of Toronto Statistical Sciences Research Day: Oral Session

Relaxing the I.I.D. Assumption: Adaptively Minimax Optimal Regret via Root-Entropic Regularization
  Feb 2022   Simons Institute for the Theory of Computing: Learning with Strategic Behaviour Reading Group
  Dec 2021   NeurIPS Workshop on Robustness and Misspecification in Prob. Modeling **(Peer-Reviewed)**
  Apr 2021   DeepMind: Foundations Reading Group **(Invited)**
  Mar 2021   University of California, Los Angeles: Computer Science Seminar **(Invited)**
  Mar 2021   Massachusetts Institute of Technology: Stochastics and Statistics Seminar **(Invited)**
  Feb 2021   RIKEN Center for Advanced Intelligence Project: Public Seminar **(Invited)**

An Introduction to Theoretical Statistics Research
  June 2022   University of Toronto: Undergraduate Research Opportunity Program Weekly Seminar **(Invited)**
  July 2021   University of Toronto: Independent Summer Stats Community Talk Series **(Invited)**

Stochastic Convergence Rates and Applications of Adaptive Quadrature in Bayesian Inference
  June 2021   International Society for Bayesian Analysis World Meeting: Oral Session

Tight Bounds on Minimax Regret under Logarithmic Loss via Self-Concordance
  Aug 2020   American Statistical Association Joint Statistical Meetings: Poster Session
  Mar 2020   New York Academy of Sciences Machine Learning Symposium: Poster Session
  Mar 2020   Institute for Advanced Study: Special Year Student Seminar

Scraping Papers from arXiv and biorXiv using Python
  May 2020   Canadian Statistics Student Conference: Scientific Workshop **(Invited)**

High-Priority Expected Waiting Times in the Delayed Accumulating Priority Queue
  Aug 2019   Canadian Queueing Conference: Oral Session
  June 2019   Southwestern Ontario Graduate Math and Stats Conference: Oral Session
  May 2019   Canadian Operational Research Society Annual Meeting: Oral Session

Simulated Co-location of Patients Admitted to an Inpatient Internal Medicine Teaching Unit
  Aug 2018   Canadian Queueing Conference: Oral Session
  July 2018   Operational Research Applied to Health Services Annual Meeting: Oral Session

TEACHING

Course Instructor
  STA347: Probability Theory (2020, 2021)

Teaching Assistant
  STA238: Probability, Statistics, and Data Analysis II (2021)
  STA257: Probability and Statistics I (2019, 2020, 2021)
  STA347: Probability Theory (2018, 2020, 2021)
  STA442: Methods of Applied Statistics (2019)
  STA261: Probability and Statistics II (2019)
  STA355: Theory of Statistical Practice (2019)
  STA457: Time Series Analysis (2019)
  ACT230: Mathematics of Finance for Non-Actuaries (2018)

OTHER ACADEMIC ACTIVITIES

Journal Referee
  IEEE Trans. on Information Theory, Journal of Machine Learning Research, Machine Learning

Conference and Workshop Referee
  AISTATS ('22, '23), ALT ('21, '23), COLT ('22), ICLR ('22), ICML ('22, '23), NeurIPS ('21, '22), UAI ('23)

Leadership Experience
  2022   Statistical Sciences Research Day Planning Committee, University of Toronto
  2019–21   Treasurer, Statistics Graduate Student Association, University of Toronto