Blair Bilodeau

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Degrees

Ph.D., Statistical Sciences, University of Toronto — June 2023
B.Sc., Financial Modelling, University of Western Ontario — June 2018

Employment

The Voleon Group, *Senior Member of Research Staff* — Oct 2024 – Present
The Voleon Group, *Member of Research Staff* — Jul 2023 – Sep 2024
- Developing systematic investment strategies using modern statistical learning.

Google Brain, *Research Intern* — Jul 2022 – Oct 2022
- Led research on statistical theory for interpretable machine learning.

University of Toronto & Vector Institute, *Ph.D. Candidate* — Sep 2018 – Apr 2023
- Led research on minimax statistical theory and sequential decision making.
- Winter 2022 at the Simons Institute for the Theory of Computing.
- Winter 2020 at the Institute for Advanced Study.

University of Western Ontario, *Undergraduate Researcher* — May 2017 – Aug 2018
- Led research on queueing theory with health care applications.

London Life, *Risk Research Intern* — May 2016 – Aug 2016
Bell Canada, *Data Analyst Intern* — May 2015 – Aug 2015

Selected Honours and Awards

D. A. S. Fraser Doctoral Thesis Award — June 2023
NSERC Postdoctoral Fellowship (*Declined*) — Sep 2023 – Sep 2025
University of Chicago Rising Star in Data Science — Nov 2022
Institute of Mathematical Statistics Hannan Graduate Student Award — Apr 2021
New York Academy of Sciences Machine Learning Symposium Best Poster Award — Mar 2020
NSERC Michael Smith Foreign Study Supplement — Jan 2020 - Mar 2020
NSERC Alexander Graham Bell Canada Graduate Scholarship (Doctoral & Master's) — Sep 2018 – Aug 2022
Queen Elizabeth II Graduate Scholarship in Science and Technology (*Declined*) — Sep 2018 – Aug 2019
NSERC Undergraduate Student Research Award (x2) — May 2017 – Aug 2018

Selected Publications (⋆Shared first authorship; $^{(A)}$Alphabetical)

B. Bilodeau, N. Jaques, P. W. Koh, B. Kim. (2024). Impossibility Theorems for Feature Attribution. **Proceedings of the National Academy of Sciences**.

⋆**B. Bilodeau**, ⋆J. Negrea, D. M. Roy. (2023). Relaxing the I.I.D. Assumption: Adaptively Minimax Optimal Regret via Root-Entropic Regularization. **Annals of Statistics**.

B. Bilodeau, D. J. Foster, D. M. Roy. (2023). Minimax Rates for Conditional Density Estimation via Empirical Entropy. **Annals of Statistics**.

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

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

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**.

Additional Academic Experience

- Invited academic talks at Alberta, Carnegie Mellon, CMStats, CREST, Deepmind, McGill, Michigan, MIT, RIKEN AIP, Simon Fraser, UCLA, Waterloo.
- Course instructor for undergraduate probability theory. TA for various undergraduate statistics courses.
- Referee for top machine learning conferences and statistics journals (awards: NeurIPS, AISTATS, UAI).