Mufan (Bill) Li

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RESEARCH POSITIONS	Postdoctoral Research Associate, Princeton University Department of ORFE, Supervised by Boris Hanin	2023-Present

DEGREES	Ph.D. Statistics, University of Toronto Thesis: *Analysis of Learning Algorithms via Diffusion Limits* Supervised by Daniel M. Roy and Murat A. Erdogdu	2017-2023
	M.Sc. Statistics, University of Toronto	2015-2016
	B.A.Sc. Engineering Science, University of Toronto	2010-2015

RESEARCH ARTICLES

See also my Google Scholar or Semantic Scholar pages.

1. Lorenzo Noci*, Chuning Li*, **M. Li***, Bobby He, Thomas Hofmann, Chris Maddison, and Daniel M. Roy, *The Shaped Transformer: Attention Models in the Infinite Depth-and-Width Limit.* To appear at NeurIPS 2023. arXiv:2306.17759.

2. Matthew Zhang, Sinho Chewi, **M. Li**, Krishnakumar Balasubramanian, and Murat A. Erdogdu, *Improved Discretization Analysis for Underdamped Langevin Monte Carlo.* COLT 2023. arXiv:2302.08049.

3. **M. Li** and Murat A. Erdogdu, *Riemannian Langevin Algorithm for Solving Semidefinite Programs.* Bernoulli 2023. arXiv:2010.11176.

4. **M. Li**, Mihai Nica, and Daniel M. Roy, *The Neural Covariance SDE: Shaped Infinite Depth-and-Width Networks at Initialization.* NeurIPS 2022 (Selected for Oral, Nominated for Outstanding Paper Award). arXiv:2206.02768.

5. Raphaël Berthier and **M. Li**, *Acceleration of Gossip Algorithms through the Euler–Poisson–Darboux Equation.* IMA Journal of Applied Mathematics 2022. arXiv:2202.10742.

6. Sinho Chewi, Murat A. Erdogdu, **M. Li**, Ruoqi Shen, and Matthew Zhang, *Analysis of Langevin Monte Carlo from Poincaré to Log-Sobolev.* COLT 2022 Extended Abstract. Resubmitted to Ann. of Appl. Prob. arXiv:2112.12662.

7. **M. Li**, Mihai Nica, and Daniel M. Roy, *The Future is Log-Gaussian: ResNets and Their Infinite-Depth-and-Width Limit at Initialization.* NeurIPS 2021. arXiv:2106.04013.

8. **M. Li**, and Maxime Gazeau, *Higher Order Generalization Error for First Order Discretization of Langevin Diffusion.* Preprint 2021. arXiv:2102.06229.

AWARDS	Doctoral Award, University of Toronto	2023
	Ontario Graduate Scholarship	2019-2023
	Student Research Presentation Award, Stat. Soc. of Canada	2021
	MITACS Accelerate Fellowship, with Borealis AI	2018-2019
	Undergraduate Summer Research Fellowship, University of Toronto	2012

INVITED TALKS	Google DeepMind *The Shaped Transformer: Attention Models in the Infinite Depth-and-Width Limit*	August 2023

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*Equal Contribution.

DeepProb, University of Oxford   Feb 2023
Neural Covariance SDE: Shaped Infinite Depth-and-Width Networks at Initialization

OPTML++, MIT (Video)   Feb 2023
Neural Covariance SDE: Shaped Infinite Depth-and-Width Networks at Initialization

Deep Learning Foundations, University of Maryland (Video)   Sept 2022
Neural Covariance SDE: Shaped Infinite Depth-and-Width Networks at Initialization

CONTRIBUTED Statistical Society of Canada Annual Meeting   May 2023
TALKS   *Neural Covariance SDE: Shaped Infinite Depth-and-Width Networks at Initialization*

Institute of Mathematical Statistics Annual Meeting   Jun 2022
Analysis of Langevin Monte Carlo from Poincaré to Log-Sobolev

Statistical Society of Canada Annual Meeting   May 2022
Analysis of Langevin Monte Carlo from Poincaré to Log-Sobolev

Statistical Society of Canada Annual Meeting   May 2021
Riemannian Langevin Algorithm for Solving Semidefinite Programs

TEACHING   ESC103 Engineering Math and Computation, University of Toronto   2017-2021
ASSISTANT   STA414 Statistical Learning, University of Toronto   2021-2022
POSITIONS   STA286 Probability and Statistics, University of Toronto   2018-2019
                 STA410 Statistical Computing, University of Toronto   2017

WORK   Research Intern, Borealis AI   Aug 2018 - Apr 2019
EXPERIENCE   Investment Analyst, Ontario Teachers' Pension Plan   Jul 2016 - Jul 2017
                 Electronic Trading Intern, RBC Capital Markets   May 2013 - Aug 2014

PEER   Journal of Machine Learning Research (JMLR)
REVIEW   Transactions on Machine Learning Research (TMLR) Expert Reviewer
                 SIAM Journal on Mathematics of Data Science (SIMODS)
                 Journal of Computational and Graphical Statistics (JCGS)
                 Neural Information Processing Systems (NeurIPS)
                 International Conference on Learning Representations (ICLR)
                 International Conference on Machine Learning (ICML)