

Hugo Latourelle-Vigeant

Department of Statistics and Data Science – Yale University
New Haven, CT, USA

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Education

Ph.D. in Statistics and Data Science

2024–Present (Expected 2030)

Yale University, New Haven, CT

- Advised by Professor Theodor Misiakiewicz

M.Sc. in Mathematics and Statistics

2022–2024

McGill University, Montreal, QC

- Thesis: The matrix Dyson equation for machine learning: Correlated linearizations and the test error in random features regression
- Co-advised by Professor Courtney Paquette and Professor Elliot Paquette

B.Sc. Joint Honours in Mathematics and Computer Science

2018–2022

McGill University, Montreal, QC

Research Interests

Random matrix theory, machine learning theory, statistical-computational trade-offs, and high-dimensional probability.

Publications & Preprints

- [1] **Latourelle-Vigeant, H.**, Chewi, S., Pooladian, A.-A., Sous, J., & Misiakiewicz, T. (2026). “Generalization, memorization, and overfitting for diffusion models trained in the lazy high-dimensional regime.” *arXiv:2608.23938* (Preprint).
- [2] **Latourelle-Vigeant, H.**, & Misiakiewicz, T. (2026). “Statistical-Computational Trade-offs in Learning Multi-Index Models via Harmonic Analysis.” *arXiv:2602.09959* (Preprint).
- [3] **Latourelle-Vigeant, H.**, & Paquette, E. (2026). “Dyson Equation for Correlated Linearizations and Test Error of Random Features Regression.” *Random Matrices: Theory and Applications*, 15(01), 2550026.

Talks & Presentations

- “Generalization, Memorization, and Overfitting in Kernel Denoising Score Matching in High Dimensions,” poster presentation, *Princeton Machine Learning Theory Summer School*, Princeton University, Princeton, NJ, August 2026.
- “Introduction to the Matrix Dyson Equation,” talk, ETH Zurich, March 2024.
- “Matrix Dyson Equation for Correlated Linearizations,” workshop talk, *The Many Facets of Random Matrix Theory workshop*, 2023 Canadian Mathematical Society Winter Meeting, Montreal, QC, December 2023.
- “Matrix Dyson Equation for Correlated Linearizations,” seminar talk, *Seminar in Machine Learning, Optimization and Random Matrix Theory*, McGill University, Montreal, QC,

September 2023.

- “GD and Large Linear Regression: Concentration and Asymptotics for a Spiked Model,” conference talk, 4th Undergraduate Student Research Conference, McGill University, Montreal, QC, August 2021.

Teaching Experience

Teaching Fellow for S&DS4100/6100 – Statistical Inference Fall 2026
Department of Statistics and Data Science, Yale University

Teaching Fellow for S&DS2420 – Theory of Statistics Spring 2026
Department of Statistics and Data Science, Yale University

Head Teaching Fellow for S&DS2410 – Probability Theory Fall 2025
Department of Statistics and Data Science, Yale University

Teaching Assistant for MATH 141 – Calculus 2 F2022, W2023, W2024
Department of Mathematics and Statistics, McGill University

Graduate Course Assistant for MATH 463/563 – Convex Optimization W2023, W2024
Department of Mathematics and Statistics, McGill University

Graduate Course Assistant for MATH 417/517 – Linear Optimization Fall 2022
Department of Mathematics and Statistics, McGill University

Undergraduate Course Assistant for MATH 560 – Optimization Winter 2022
Department of Mathematics and Statistics, McGill University

*Note: W = Winter, S = Spring, F = Fall

Academic Service

Organization.....

Co-organizer, Montreal RMT-OPT-ML Seminar Fall 2023
McGill University

Review.....

Main Track Reviewer 2026
Conference on Neural Information Processing Systems (NeurIPS)

High-dimensional Learning Dynamics (HiLD) Workshop 2023–2026
International Conference on Machine Learning (ICML)

OPT Workshop on Optimization for Machine Learning 2022–2026
Conference on Neural Information Processing Systems (NeurIPS)

Volunteering.....

OPT Workshop on Optimization for Machine Learning 2020–2021
Conference on Neural Information Processing Systems (NeurIPS)

Work Experience

Data Science Intern Summer 2024
Caisse de dépôt et placement du Québec (CDPQ), Montreal, QC

- Part of the natural language processing (NLP) team
- Conducted topic modeling and sentiment analysis on large-scale financial documents

Awards and Scholarships

First-Class Honours in Mathematics and Computer Science <i>McGill University</i>	2022
Undergraduate Student Research Award (USRA) & FRQNT Supplement <i>NSERC & FRQNT</i>	2021
Major Entrance Scholarship in Science <i>Hydro-Québec</i>	2018