









# Benoît Corsini

Researcher in Probability








## Education

-  **Doctor of Philosophy**, McGill University. 2017 - 2022  
*Constructive methods for random permutations and random trees*, supervised by Louigi Addario-Berry.
-  **Master of Advanced Studies (Part III)**, University of Cambridge. 2016 - 2017
-  **Diplôme d'Ingénieur**, École Polytechnique. 2013 - 2016
-  **Classes Préparatoires**, Lycée Condorcet. 2010 - 2013

## Experience

-  **PostDoctoral Researcher**, Eindhoven University of Technology. Aug. 2022 - Aug. 2024  
(2 Years)  
*NETWORKS* PostDoc, working on random models of graphs under the supervision of Remco van der Hofstad.
-  **Research Intern**, Element AI. Feb. 2020 - Sep. 2020  
(8 Months)  
*Mitacs* internship, working on anomaly detection in graphs using *Graph Neural Networks* (GNN).
-  **Data Science Intern**, University of Berkeley. Mar. 2016 - Jul. 2016  
(4 Months)  
Internship jointly with a French start-up (*Occi*, now *WeWard*), studying movements of clients in a superstore.
-  **Assistant Teacher**, Lycée Lachenal. Oct. 2013 - Mar. 2014  
(6 Months)  
Assistant teacher in a high-school and post-secondary institution.

## Research

	<b>Local limit of Prim's algorithm,</b> <i>with R. Gündlach and R. van der Hofstad, in progress.</i>	2024+
	<b>Binary search trees of permuton samples,</b> <i>with V. Dubach and V. Féray, published in <u>Advances in Applied Mathematics</u>.</i>	Mar. 2024
	<b>Limits of Mallows trees,</b> <i>published in the <u>Electronic Journal of Probability</u>.</i>	Dec. 2023
	<b>Finding minimum spanning trees via local improvements,</b> <i>with L. Addario-Berry and J. Barrett, preprint.</i>	May 2022
	<b>Continuous-time Mallows processes,</b> <i>under major re-work.</i>	May 2022
	<b>The height of record-biased trees,</b> <i>published in <u>Random Structures and Algorithms</u>.</i>	Dec. 2021
	<b>Similarity of structures in popular music,</b> <i>published in the <u>Journal of New Music Research</u>.</i>	Apr. 2021
	<b>The height of Mallows trees,</b> <i>with L. Addario-Berry, published in the <u>Annals of Probability</u>.</i>	Jul. 2020

## Honours and Awards

	<b>Scholarship for Outstanding PhD candidates,</b> Institut des Sciences Mathématiques (ISM).	Oct. 2021
	<b>Outstanding Teaching Assistant Award,</b> <i>Introduction to Stochastic Processes, McGill University.</i>	Jun. 2021
	<b>Carl-Herz Prize,</b> Institut des Sciences Mathématiques (ISM).	May 2021
	<b>Alexis &amp; Charles Pelletier Fellowship,</b> McGill University.	Apr. 2021
	<b>Mitacs Accelerate Fellowship,</b> <i>with Element AI, Mitacs.</i>	Feb. 2020
	<b>Outstanding Investment,</b> École Polytechnique.	Oct. 2015






## Teaching

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- TU/e** **Probability and Statistics**,  
Eindhoven University of Technology. Nov. 2023 - Jan. 2024
- TU/e** **Probability and Statistics** (*jointly with M. Gösgens*),  
Eindhoven University of Technology. Sep. 2023 - Oct. 2023



## Teaching Assistantship

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- TU/e** **Calculus and Probability Theory**,  
Eindhoven University of Technology. Sep. 2023 - Oct. 2023
- TU/e** **Programing and Modelling**,  
Eindhoven University of Technology. Feb. 2023 - Mar. 2023
- TU/e** **Longitudinal Data Analysis**,  
Eindhoven University of Technology. Sep. 2022 - Oct. 2022
-  **Introduction to Stochastic Processes**,  
McGill University (*received a Teaching Assistant Award*). Jan. 2021 - Apr. 2021
-  **Discrete Structures**,  
McGill University. Sep. 2019 - Dec. 2019
-  **Probability**,  
McGill University. Sep. 2018 - Dec. 2018
-  **Principles of Statistics 2**,  
McGill University. Jan. 2018 - Apr. 2018
-  **Calculus 2**,  
McGill University. Sep. 2017 - Dec. 2017

## Research Visits

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-  **Institut Élie Cartan**,  
visit to Valentin Féray and Mathilde Bouvel (one week). May 2023
-  **McGill University**,  
visit to Louigi Addario-Berry (one month). May 2024

## Events Organized

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-  **YEP XIX: Interplay between local and global graph structures**, Mar. 2024  
organized with Bas Lodewijks and Clara Stegehuis.






## Supervision

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-  **Aron van Veldhuizen** (*Bachelor*), Jan. 2023 - Jul. 2023  
“Using random graphs to model the network of countries”.



## Extra Curricular

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-  **Organizing Member of MathPark**, 2022 - 2023  
monthly presentations for undergraduate students.
-  **PhD Member of the Committee of Graduate Affairs**, 2019 - 2022  
committee discussing future directions of the department.
-  **Graduate Student Seminar Organizer**, 2019 - 2020  
weekly presentations from graduate students of the department.
-  **Maths en Jeans Tutor**, 2018 - 2019  
monthly tutoring sessions of high-school students.
-  **Delegate of Student Section**, 2014 - 2016  
making the link between the students and the administration.

## Other Projects









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-  **Randomly playing chess**, Aug. 2024  
video produced for the *Summer of Math Exposition*.
-  **J. Snow, P. Buffay, and M. Scott are in a network, what do they see?**, Sep. 2023  
popularization article written for the *Networks Pages*.

# Events and Talks (2022 - 2024)

		2025
The permuton tree .....	<b>Italian Meeting on Probability and Mathematical Statistics,</b> <i>Sapienza Università di Roma, Rome, Italy.</i>	
Local limit of Mallows trees .....	<b>Training Week,</b> <i>NETWORKS, Asperen, Netherlands.</i>	
Modèles aléatoires d'arbres binaires de recherche .....	<b>Séminaire de Probabilités,</b> <i>Laboratoire de Probabilités, Statistique et Modélisation (LPSM), Paris, France.</i>	
	<b>YEP XIX: Interplay between local and global graph structures,</b> <i>Eindhoven University of Technology, Eindhoven, Netherlands.</i>	
Local weighted optimizations and open problems .....	<b>Probability and Dynamics Seminar,</b> <i>University of Victoria, Online.</i>	
		2024
	<b>Training Week,</b> <i>NETWORKS, Asperen, Netherlands.</i>	
Random models of binary search trees .....	<b>Conference on Stochastic Processes and their Applications,</b> <i>University of Lisbon, Lisbon, Portugal.</i>	
(poster session)		
Mallows processes and the expanded hypercube .....	<b>Permutation Patterns,</b> <i>University of Burgundy, Dijon, France.</i>	
Modèles aléatoires d'arbres binaires de recherche .....	<b>Séminaire Probabilités et Statistique,</b> <i>Institut Élie Cartan, Nancy, France.</i>	
	<b>Training Week,</b> <i>NETWORKS, Asperen, Netherlands.</i>	
	<b>YEP XVIII: Spectra of Random Graphs and Related Combinatorial Problems,</b> <i>Eindhoven University of Technology, Eindhoven, Netherlands.</i>	
Random models of binary search trees .....	<b>iPOD Seminar,</b> <i>Leiden University, Leiden, Netherlands.</i>	
		2023
Local weighted optimizations .....	<b>STAR Workshop on Random Graphs,</b> <i>University of Groningen, Groningen, Netherlands.</i>	
Local weighted optimizations .....	<b>Training Week,</b> <i>NETWORKS, Asperen, Netherlands.</i>	
	<b>Recent Trends in Spatial Stochastic Processes,</b> <i>Eindhoven University of Technology, Eindhoven, Netherlands.</i>	
Local weighted optimizations .....	<b>RandNET Workshop on Random Graphs,</b> <i>Eindhoven University of Technology, Eindhoven, Netherlands.</i>	
Similarité entre structures dans la musique populaire/Anomalies dans les réseaux .....	<b>Congès de l'Acfas,</b> <i>Association francophone pour le savoir (Acfas), Online.</i>	
"Peut-on transformer Paris en Montréal ?" .....	<b>3MT/MT180 Competition,</b> <i>McGill University, Montreal, Québec, Canada.</i>	
(finalist)	<b>Annual Workshop on Probability and Combinatorics,</b> <i>Bellairs Research Institute, Holetown, Barbados.</i>	
		2022

# Events and Talks (2018 - 2021)

		2022
Local minimum spanning tree optimization <i>(first prize at poster session)</i>	CMS Winter Meeting, Canadian Mathematical Society (CMS), Online.	
Anomaly detection in graphs	Big Thought Time Talk, Nokia-Bell Labs, Online.	
Local minimum spanning tree optimization	Northeast Probability Seminar, Columbia University, Online.	
The height of random trees <i>(with L. Addario-Berry)</i>	Math Salon, Canadian Mathematical Society (CMS), Online.	
	Permutations and Probability, Banff International Research Station (BIRS), Online.	
Airline Codeshare correlative analysis <i>(second place at final pitch)</i>	Industrial Problem Solving Workshop, Université de Montréal, Online.	
	CRM-PIMS Summer School in Probability, Centre de Recherches Mathématiques (CRM), Online.	
The height of Mallows trees/Local minimum spanning tree optimization <i>(first prize at 3 Minute Thesis competition)</i>	Ottawa Mathematics Conference, University of Ottawa, Online.	
The height of Mallows trees	ISM Graduate Student Conference, Institut des Sciences Mathématiques (ISM), Online.	
		2021
The height of Mallows trees <i>(third prize at poster session)</i>	CMS Winter Meeting, Canadian Mathematical Society (CMS), Online.	
The height of Mallows trees	Bernoulli-IMS One World Symposium, Institute of Mathematical Statistics (IMS), Online.	
	Spectra, Algorithms, and Random Walks on Random Networks, Centre International de Rencontres Mathématiques (CIRM), Marseille, France.	
		2020
	Nice Summer School on Random Walks and Complex Networks, Université Côte d'Azur, Nice, France.	
	Dynamics of Random Processes, Université de Montréal, Montreal, Québec, Canada.	
	Annual Workshop on Probability, Combinatorics and Geometry, Bellairs Research Institute, Holetown, Barbados.	
	Seminar on Stochastic Processes, University of Utah, Salt Lake City, Utah, USA.	
		2019
	Challenges in Probability and Mathematical Physics, Université de Montréal, Montreal, Québec, Canada.	
	IMS Annual Meeting on Probability and Statistics, Vilnius University, Vilnius, Lithuania.	
	Annual Workshop on Probability and Combinatorics, Bellairs Research Institute, Holetown, Barbados.	
	Workshop on Probabilistic and Extremal Combinatorics, Harvard University, Cambridge, Massachusetts, USA.	
		2018