

# Benoît Corsini

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## Curriculum Vitae

### Education

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

### Research

- May 2022 **L. Addario-Berry, J. Barrett, and B. Corsini**, *Finding minimum spanning trees via local improvements*, [arXiv.org/abs/2205.05075](https://arxiv.org/abs/2205.05075).
- May 2022 **B. Corsini**, *Continuous-time Mallows processes*, [arXiv.org/abs/2205.04967](https://arxiv.org/abs/2205.04967).
- Dec. 2021 **B. Corsini**, *The height of record-biased trees*, [arxiv.org/abs/2112.05732](https://arxiv.org/abs/2112.05732), to be published in *Random Structures & Algorithms*.
- Apr. 2021 **B. Corsini**, *Similarity of structures in popular music*.
- Jul. 2020 **L. Addario-Berry and B. Corsini**, *The height of Mallows trees*, *Annals of Probability* 49 (5) 2220 - 2271, September 2021. <https://doi.org/10.1214/20-AOP1503>.

### Experience

- Aug. 2022 - July 2024 **PostDoctoral Researcher**, *Eindhoven University of Technology*, Eindhoven, Netherlands.  
*Networks* PostDoc under the *Co-Fund* grant from the *Marie Skłodowska-Curie Actions* (MSCA). Working on models of random graphs with Remco van der Hofstad.
- Feb. 2020 - Sep. 2020 **Research Intern**, *Element AI*, Montreal, Québec, Canada.  
Research internship in the Fundamental Research Laboratory, working on anomaly detection in graphs using *Graph Neural Networks* (GNN).
- Mar. 2016 - July 2016 **Data Science Intern**, *University of Berkeley*, Berkeley, California, USA.  
Research internship jointly with a French start-up (*Occi*), working on movements of clients in a superstore.
- Oct. 2013 - Mar. 2014 **Assistant Teacher**, *Lycée Lachenal*, Argonay, France.  
Assistant teacher in a high-school and post-secondary institution.

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## Honours and Awards

- Oct. 2021 **Scholarship for Outstanding PhD candidates**, *Institut des Sciences Mathématiques (ISM)*.
- June 2021 **Outstanding Teaching Assistant Award**, *MATH 447, McGill University*.
- May 2021 **Carl-Herz Prize**, *Institut des Sciences Mathématiques (ISM)*.
- Apr. 2021 **Alexis & Charles Pelletier Fellowship**, *McGill University*.
- Feb. 2020 **Mitacs Accelerate Fellowship**, *Mitacs & Element AI*.
- Sep. 2019 **ISM Graduate Scholarship**, *Institut des Sciences Mathématiques (ISM)*.
- July 2019 **CRM Travel Funding**, *Centre de Recherches Mathématiques (CRM)*.
- Sep. 2018 **ISM Graduate Scholarship**, *Institut des Sciences Mathématiques (ISM)*.
- Oct. 2015 **Outstanding Investment**, *École Polytechnique*.

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## Talks

- Aug. 2022 **Local weighted optimizations**, *RandNET Workshop*.
- May 2022 **Anomalies dans les réseaux**, *Congrès de l'Acfas*.
- May 2022 **Similarité entre structures dans la musique populaire**, *Congrès de l'Acfas*.
- Dec. 2021 **Local minimum spanning tree optimization**, *CMS Winter Meeting*.
- Dec. 2021 **Anomaly detection in graphs**, *Nokia Bell Labs*.
- Nov. 2021 **Local minimum spanning tree optimization**, *Northeast Probability Seminar*.
- Sep. 2021 **The height of random trees (with L. Addario-Berry)**, *Math Salon*.
- May 2021 **The height of Mallows trees**, *Ottawa Mathematics Conference*.
- May 2021 **The height of Mallows trees**, *ISM Graduate Student Conference*.
- Apr. 2021 **Mallows trees**, *MATH 447*.
- Dec. 2020 **The height of Mallows Trees**, *CMS Winter Meeting*.
- Aug. 2020 **The height of Mallows Trees**, *Bernoulli-IMS One World Symposium*.

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## Competitions

- Apr. 2022 **"Peut-on transformer Paris en Montréal ?"**, *3MT/MT180 Competition*.  
*Finalist*
- Dec. 2021 **Local minimum spanning tree optimization**, *CMS Meeting, Poster session*.  
*First prize*
- Aug. 2021 **Airline Codeshare correlative analysis**, *Industrial Problem Solving Workshop*,  
Final pitch.  
*Second place*
- May 2021 **Local minimum spanning tree optimization**, *Ottawa Mathematics Conference*,  
3 Minutes Thesis competition.  
*First prize*
- Dec. 2020 **The height of Mallows trees**, *CMS Meeting, Poster session*.  
*Third prize*

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## Teaching Assistant

- Fall 2022 **Longitudinal Data Analysis**, *TU Eindhoven*.
- Winter 2021 **Introduction to Stochastic Processes**, *McGill University*.
- Fall 2019 **Discrete Structures**, *McGill University*.
- Fall 2018 **Probability**, *McGill University*.
- Winter 2018 **Principles of Statistics 2**, *McGill University*.
- Fall 2017 **Calculus 2**, *McGill University*.

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## Computing

- Python** Working proficiency.
- LaTeX** Working proficiency.
- HTML** Good knowledge.
- CSS** Good knowledge.
- JavaScript** Good knowledge.

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## Language

- French** Native language.
- English** Bilingual.
- Italian** Good knowledge.
- German** Good knowledge.
- Dutch** Learning.

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## Extra Curricular

- 2019 - 2022 **PhD Member of the Committee of Graduate Affairs**, *McGill University*.
- 2019 - 2020 **Graduate Student Seminar Organizer**, *McGill University*.
- 2018 - 2019 **Maths en Jeans Tutor**, *Maths en Jeans*.
- 2018 - 2019 **Vice President (Academic) of the Graduate Student Association for Mathematics and Statistics**, *McGill University*.
- 2014 - 2016 **Delegate of Student Section**, *École Polytechnique*.

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## Extra Projects

- Music** I wrote, recorded, and mixed an instrumental album, called *Personal Moods* by *Grenu*.

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## Event Participation

- Aug. 2022 **RandNET Workshop on Random Graphs**, *RandNET*, Eindhoven, Netherlands.
- May 2022 **Congrès de l'Acfas**, *Association francophone pour le savoir (Acfas)*, Québec City, Québec, Canada.
- Apr. 2022 **3MT/MT180 Competition**, *McGill University*, Montreal, Québec, Canada.
- Dec. 2021 **CMS Winter Meeting**, *Canadian Mathematical Society (CMS)*, Online.
- Nov. 2021 **Northeast Probability Seminar**, *Columbia University*, Online.
- Aug. 2021 **Industrial Problem Solving Workshop**, *Université de Montréal*, Online.
- May 2021 **Ottawa Mathematics Conference**, *University of Ottawa*, Online.
- May 2021 **ISM Graduate Student Conference**, *Institut des Sciences Mathématiques (ISM)*, Online.
- Dec. 2020 **CMS Winter Meeting**, *Canadian Mathematical Society (CMS)*, Online.
- Aug. 2020 **Bernoulli-IMS One World Symposium**, *Institute of Mathematical Statistics (IMS)*, Online.

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## Event Attendance

- Mar. 2022 **Sixteenth Annual Workshop on Probability and Combinatorics**, *Bellairs Research Institute*, Holetown, Barbados.
- Sep. 2021 **Permutations and Probability**, *Banff International Research Station (BIRS)*, Online.
- June 2021 **CRM-PIMS Summer School in Probability**, *Centre de Recherches Mathématiques (CRM)*, Online.
- Jan. 2020 **Spectra, Algorithms, and Random Walks on Random Networks**, *Centre International de Rencontres Mathématiques (CIRM)*, Marseille, France.
- July 2019 **Nice Summer School on Random Walks and Complex Networks**, *Université Côte d'Azur*, Nice, France.
- June 2019 **Dynamics of Random Processes**, *Université de Montréal*, Montreal, Québec, Canada.
- Apr. 2019 **Fourteenth Annual Workshop on Probability, Combinatorics and Geometry**, *Bellairs Research Institute*, Holetown, Barbados.
- Mar. 2019 **Seminar on Stochastic Processes 2019**, *University of Utah*, Salt Lake City, Utah, USA.
- July 2018 **Challenges in Probability and Mathematical Physics**, *Université de Montréal*, Montreal, Québec, Canada.
- July 2018 **12th International Vilnius Conference on Probability Theory and Mathematical Statistics and 2018 IMS Annual Meeting on Probability and Statistics**, *Vilnius University*, Vilnius, Lithuania.
- Apr. 2018 **Thirteenth Annual Workshop on Probability and Combinatorics**, *Bellairs Research Institute*, Holetown, Barbados.
- Feb. 2018 **Workshop on Probabilistic and Extremal Combinatorics**, *Harvard University*, Cambridge, Massachusetts, USA.