

# Jérémie Turcotte

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## Education

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2021 - 2024	PhD in mathematics McGill University GPA: 4.0/4.0 Thesis: Colourings and games on sparse graphs <a href="#">↗</a>
2018 - 2021	Master's in mathematics Université de Montréal GPA: 4.3/4.3 Thesis: The game of cops and robbers on various graph classes <a href="#">↗</a>
2015 - 2018	Bachelor's in pure and applied mathematics Université de Montréal GPA: 4.28/4.3
2024 +	Non-degree coursework Université de Montréal (Mila) Classes followed: Representation learning, Probabilistic graphical models

## Work experience

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2025 -	Quantitative researcher Squarepoint Capital
2024 - 2025	Machine learning research scientist Simmunome Inc. Development and evaluation of deep learning models and graph algorithms for therapeutic target discovery and validation.
Spring 2024	Intern, data science for asset management Hydro-Québec Development of an electrical distribution network reliability model using fault tree analysis.
Fall 2020	Lecturer Université de Montréal Symbolic calculation and applications (MAT1680)
Sum. 2020	Data science software development intern Genetec Inc. Data analysis and internal tools development in R and Python.
2017 - 2019	Teaching assistant Université de Montréal Computer assisted mathematics            MAT1681            F19, F18, W18, F17 Symbolic calculation and applications    MAT1680            F19 Graphs and networks                        IFT3545/MAT6490    W19 Analysis 1                                        MAT1000            F18 Discrete structures in computer science   IFT1065            F17

## Awards and scholarships

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2024	Postdoctoral research scholarship (B3X) <sup>1</sup>	Fonds de recherche du Québec (FRQNT)
2021	Wolfe Fellowship in Science & Technology Literacy	Faculty of Science - McGill University

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<sup>1</sup>Declined in order to accept industry job.

2021	Canada Graduate Scholarships D	NSERC
2021	Doctoral research scholarship (B2X)	Fonds de recherche du Québec (FRQNT)
2018	Georges-Baril Prize	Faculty of arts and sciences (UdeM)
2018	Jean-Maranda Prize	Department of Mathematics and Statistics (UdeM)
2018	Canada Graduate Scholarships M	NSERC
2018	Master's research scholarship (B1X)	Fonds de recherche du Québec (FRQNT)
2017	Undergraduate Student Research Award (USRA)	NSERC

## Publications

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Note: In mathematics the order of coauthors is alphabetical.

- [1] Carla Groenland, Sean Longbrake, Raphael Steiner, Jérémie Turcotte, and Liana Yepremyan. Longest cycles in vertex-transitive and highly connected graphs. *Bulletin of the London Mathematical Society*, 57(10):2975–2990, October 2025. doi:[10.1112/blms.70134](https://doi.org/10.1112/blms.70134).
- [2] Sergey Norin and Jérémie Turcotte. Limits of degeneracy for colouring graphs with forbidden minors. *Transactions of the American Mathematical Society*, 378(9):6425–6451, September 2025. doi:[10.1090/tran/9493](https://doi.org/10.1090/tran/9493).
- [3] Kevin Hendrey, Sergey Norin, Raphael Steiner, and Jérémie Turcotte. Twin-width of sparse random graphs. *Combinatorics, Probability and Computing*, 34(4):401–420, May 2025. doi:[10.1017/S0963548324000439](https://doi.org/10.1017/S0963548324000439).
- [4] Franklin Kenter, Erin Meger, and Jérémie Turcotte. Improved bounds on the cop number when forbidding a minor. *Journal of Graph Theory*, 108(3):620–646, March 2025. doi:[10.1002/jgt.23194](https://doi.org/10.1002/jgt.23194).
- [5] Kevin Hendrey, Sergey Norin, Raphael Steiner, and Jérémie Turcotte. Finding dense minors using average degree. *Journal of Graph Theory*, 108(1):205–223, January 2025. doi:[10.1002/jgt.23169](https://doi.org/10.1002/jgt.23169).
- [6] Kevin Hendrey, Sergey Norin, Raphael Steiner, and Jérémie Turcotte. On an Induced Version of Menger's Theorem. *The Electronic Journal of Combinatorics*, 31(4):P4.28, November 2024. doi:[10.37236/12575](https://doi.org/10.37236/12575).
- [7] Sergey Norin and Jérémie Turcotte. The burning number conjecture holds asymptotically. *Journal of Combinatorial Theory, Series B*, 168:208–235, September 2024. doi:[10.1016/j.jctb.2024.05.003](https://doi.org/10.1016/j.jctb.2024.05.003).
- [8] Maria Chudnovsky, Sergey Norin, Paul D. Seymour, and Jérémie Turcotte. Cops and Robbers on  $P_5$ -Free Graphs. *SIAM Journal on Discrete Mathematics*, 38(1):845–856, March 2024. doi:[10.1137/23M1549912](https://doi.org/10.1137/23M1549912).
- [9] Jérémie Turcotte. Cops and robbers on  $2K_2$ -free graphs. *Discrete Mathematics*, 345(1):112660, January 2022. doi:[10.1016/j.disc.2021.112660](https://doi.org/10.1016/j.disc.2021.112660).
- [10] Peter Bradshaw, Seyyed Aliasghar Hosseini, and Jérémie Turcotte. Cops and robbers on directed and undirected abelian Cayley graphs. *European Journal of Combinatorics*, 97:103383, October 2021. doi:[10.1016/j.ejc.2021.103383](https://doi.org/10.1016/j.ejc.2021.103383).
- [11] Jérémie Turcotte and Samuel Yvon. 4-cop-win graphs have at least 19 vertices. *Discrete Applied Mathematics*, 301:74–98, October 2021. doi:[10.1016/j.dam.2021.05.012](https://doi.org/10.1016/j.dam.2021.05.012).
- [12] Paul M. Gauthier, Thomas Ransford, Simon St-Amant, and Jérémie Turcotte. Approximation by random complex polynomials and random rational functions. *Annales Polonici Mathematici*, 123:267–294, 2019. doi:[10.4064/ap180912-20-2](https://doi.org/10.4064/ap180912-20-2).

## Technical knowledge

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### Programming languages

Python (Pytorch, NumPy, Pandas), Mathematica, Java, L<sup>A</sup>T<sub>E</sub>X, R, HTML, Julia, MATLAB, Lean prover, C++

### Other technologies

Git, Amazon Web Services, Google Cloud