

# 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
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
2015 - 2018	Bachelor's in pure and applied mathematics Université de Montréal GPA : 4.28/4.3

## Work experience

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April 2024 -	Machine learning research scientist Simmunome Inc.
Spring 2024	Intern, data science for asset management Hydro-Québec
Fall 2020	Lecturer Université de Montréal Symbolic calculation and applications (MAT1680)
Sum. 2020	Data science software development intern Genetec Inc. Developing tools and data analysis 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
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

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

## Publications

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Note: In mathematics the order of coauthors is alphabetical.

### Published articles

- [1] Kevin Hendrey, Sergey Norin, Raphael Steiner, and Jérémie Turcotte. Twin-width of sparse random graphs. *Combinatorics, Probability and Computing*, pages 1–20, December 2024. doi:[10.1017/S0963548324000439](https://doi.org/10.1017/S0963548324000439).
- [2] 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).
- [3] Franklin Kenter, Erin Meger, and Jérémie Turcotte. Improved bounds on the cop number when forbidding a minor. *Journal of Graph Theory*, pages 1–27, October 2024. doi:[10.1002/jgt.23194](https://doi.org/10.1002/jgt.23194).
- [4] Kevin Hendrey, Sergey Norin, Raphael Steiner, and Jérémie Turcotte. Finding dense minors using average degree. *Journal of Graph Theory*, pages 1–19, September 2024. doi:[10.1002/jgt.23169](https://doi.org/10.1002/jgt.23169).
- [5] 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).
- [6] 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).
- [7] 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).
- [8] 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).
- [9] 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).
- [10] 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).

### Submitted articles

- [11] Carla Groenland, Sean Longbrake, Raphael Steiner, Jérémie Turcotte, and Liana Yepremyan. Longest cycles in vertex-transitive and highly connected graphs, August 2024. URL: <http://arxiv.org/abs/2408.04618>.
- [12] Sergey Norin and Jérémie Turcotte. Limits of degeneracy for colouring graphs with forbidden minors, April 2023. URL: <https://arxiv.org/abs/2304.13715>.

## Programming knowledge

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### Programming languages

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