

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 ↗ Supervisor: Sergey Norin (Department of Mathematics and Statistics) |
| 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 ↗ Supervisors: Geña Hahn (Department of Computer Science and Operations Research) and Ben Seamone (Department of Computer Science and Operations Research and Dawson College) |
| 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 |

Last updated November 13, 2025

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| 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) ¹ 110 000\$ for 24 months Ranked 1/6 in mathematics committee | Fonds de recherche du Québec - Nature et technologies (FRQNT) |
| 2021 | Wolfe Fellowship in Science & Technology Literacy 6 000\$ | Faculty of Science - McGill University |
| 2021 | Canada Graduate Scholarships Alexander-Graham-Bell - Doctoral (CGS D) 105 000\$ for 36 months Ranked 3/92 in mathematical sciences committee | Natural Sciences and Engineering Research Council of Canada (NSERC) |
| 2021 | Doctoral research scholarship (B2X) 84 000\$ for 48 months ² Ranked 1/24 in mathematics committee | Fonds de recherche du Québec - Nature et technologies (FRQNT) |
| 2018 | Georges-Baril Prize 2 000\$ | Faculty of arts and sciences - Université de Montréal |
| 2018 | Jean-Maranda Prize 750\$ | Department of Mathematics and Statistics - Université de Montréal |
| 2018 | Canada Graduate Scholarships Alexander-Graham-Bell - Master's (CGS M) 17 500\$ for 12 months | Natural Sciences and Engineering Research Council of Canada (NSERC) |
| 2018 | Master's research scholarship (B1X) 29 167\$ for 20 months ² | Fonds de recherche du Québec - Nature et technologies (FRQNT) |
| 2017 | Supplement of the NSERC USRA 2 000\$ | Fonds de recherche du Québec - Nature et technologies (FRQNT) |
| 2017 | Undergraduate Student Research Award (USRA) 5 625\$ for 4 months | Natural Sciences and Engineering Research Council of Canada (NSERC) |
| 2015 | Desjardins Scholarship for Excellency in Computer Science and Mathematics 1 000\$ | Caisse Desjardins de Bois-Franc-Bordeaux-Cartierville & Collège de Bois-de-Boulogne |
| 2015 | Mathematics scholarship 500\$ | Collège de Bois-de-Boulogne |

Publications

- [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).

¹Declined in order to accept industry job.

²Partial amount received due to concurrent funding rules.

- [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.
- [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.
- [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.
- [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.
- [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.
- [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.
- [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.
- [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.
- [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.

Additional activities

Involvement

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| 2023 - 2024 | Volunteer and website manager Support our Science ↗ |
| 2022 - 2023 | Co-organizer McGill Mathematics and Statistics Graduate Seminar (MMSGS) ↗ |
| 2022 - 2023 | Co-organizer McGill Discrete Mathematics and Optimization Seminar (DMO) ↗ |
| 2017 - 2018, 2018 - 2019 | Student representative on the departmental assembly Department of Mathematics and Statistics (Université de Montréal) |
| 2017 - 2018 | Co-organizer Université de Montréal mathematics club (Clubmath) ↗ |

Reviewing for journals and conferences

Discrete Mathematics (×3)
 Discussiones Mathematicae Graph Theory (×1)
 Electronic Journal of Combinatorics (×1)
 49th International Workshop on Graph-Theoretic Concepts in Computer Science (WG 2023) (×1)

Mentorship

McGill Directed Reading Program

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| Winter 2024 | Gabriella Chen, Eloise Freyrier, Cedric Phillips Topic : Proof formalisation in the Lean language |
| Winter 2023 | Sara Li, Simon Overgaard (jointly with Alexis Leroux-Lapierre) Topic : Percolation theory |
| Winter 2022 | Agnes Totschnig, Sophia Howard Topic : Cops and robbers on graphs |

For honors project

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| Fall 2019 | Samuel Yvon (supervised by Geňa Hahn) |
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Talks and conferences

Talks

Talks on the proof that the Burning Number Conjecture holds asymptotically

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| October 2023 | Princeton Discrete Math Seminar |
| June 2023 | CanaDAM 2023 |
| March 2023 | McGill Mathematics and Statistics Graduate Seminar |
| February 2023 | Atlantic Graph Theory Seminar |
| November 2022 | McGill Discrete Mathematics and Optimization Seminar |
| October 2022 | Georgia Tech Graph Theory Seminar |
| July 2022 | 15th Ottawa Mathematics Conference |
| July 2022 | Cracow Summer School in Discrete Mathematics |

Talk on finding dense minors using average degree

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| May 2023 | Montreal Graph Theory Workshop |
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Talks on the cop number of abelian Cayley graphs

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| August 2021 | GRASCan Workshop 2021 |
| October 2019 | Séminaire étudiant en mathématique de l'Université de Montréal (SÉM) |

Talks on the minimum order of 4-cop-win graphs

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| June 2021 | 2021 CMS Summer Meeting |
| May 2021 | CanaDAM 2021 |
| May 2021 | Colloque panquébécois de l'ISM |

Talks on the game of cops and robbers

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| August 2020 | Genetec TechTalks |
| June 2020 | Séminaire d'été des étudiants, Département de Mathématiques et de Statistique (Université de Montréal) |

Talk on the anthropic principle

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| May 2018 | Club mathématique de l'Université de Montréal (Clubmath) |
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Talks on mistakes in mathematics

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| January 2018 | Club mathématique de l'Université de Montréal (Clubmath) |
| January 2018 | Seminars in Undergraduate Mathematics in Montreal (SUMM) |

Talk on infinite friendship graphs

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| June 2017 | Club mathématique de l'Université de Montréal (Clubmath) |
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In-person conference and workshop attendance

2024 | 2024 Barbados Graph Theory Workshop [↗](#)

- 2023 | Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM) [↗](#)
Montreal Graph Theory Workshop [↗](#)
- 2022 | Second 2022 Barbados Graph Theory Workshop [↗](#)
Third Southwestern German Workshop on Graph Theory [↗](#)
- 2019 | Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM) [↗](#)

Technical knowledge

Programming languages

Python (Pytorch, NumPy, Pandas), Mathematica, Java, \LaTeX , R, HTML, Julia, MATLAB, Lean prover, C++

Other technologies

Git, Amazon Web Services, Google Cloud