Jérémie Turcotte

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Education

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: Geňa 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

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.

Last updated November 13, 2025

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

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.

[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.

[1] Declined in order to accept industry job.
[2] Partial amount received due to concurrent funding rules.

[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.

[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

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

Winter 2024	Gabriella Chen, Eloise Freydier, 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

Fall 2019	Samuel Yvon (supervised by Geňa Hahn)

Talks and conferences

Talks

Talks on the proof that the Burning Number Conjecture holds asymptotically

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

May 2023	Montreal Graph Theory Workshop

Talks on the cop number of abelian Cayley graphs

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

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

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

May 2018	Club mathématique de l'Université de Montréal (Clubmath)

Talks on mistakes in mathematics

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

Talk on infinite friendship graphs

June 2017	Club mathématique de l'Université de Montréal (Clubmath)

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