
PERSONAL AND CONTACT INFORMATION

Citizen of Canada and Singapore
 Email: marcel_goh@yahoo.ca
 Webpage: marcelgoh.ca

5872 Esplanade Avenue
 Montreal, QC H2T 3A3
 +1 (825) 440-0681

EDUCATION

Ph.D. Mathematics
McGill University
 Supervisor: Hamed Hatami.

September 2023 – present
Montréal, QC, Canada

M.Sc. Mathematics
McGill University
 Supervisor: Luc Devroye. CGPA: 4.00/4. Thesis: Structural properties of conditional Galton–Watson trees.

May 2021 – August 2022
Montréal, QC, Canada

B.Sc. Joint Honours Mathematics and Computer Science
McGill University
 Minor: Linguistics. CGPA: 3.84/4.

September 2017 – April 2021
Montréal, QC, Canada

Exchange semester
Faculty of Mathematics and Physics, Charles University
 Grade: 1 on all courses (highest score attainable).

February – June 2019
Prague, Czech Republic

AWARDS AND FUNDING

NSERC Canada Graduate Scholarship – Doctoral (\$115,000)
Constance Cooke CNF Prize (\$1,250)
FRQNT Bourse de doctorat en recherche (\$100,000)
NSERC Canada Graduate Scholarship – Master's (\$17,500)
NSERC Undergraduate Student Research Award (\$7,125)
Governor General's Academic Medal – Bronze

September 2023 – August 2026
October 2024
[Declined]
May 2021 – April 2022
May – August 2020
June 2015

RESEARCH INTERESTS

Additive combinatorics, enumerative combinatorics, analysis of random discrete structures.

PAPERS (in reverse order of acceptance, not necessarily appearance)

- P9.** (with Hamed Hatami) Block complexity and idempotent Schur multipliers. To appear in *International Mathematics Research Notices*. [arXiv:2506.21752]
- P8.** (with Tsun-Ming Cheung and Luc Devroye) A note on plane trees with decreasing labels. *Online Journal of Analytic Combinatorics* **20** (2025), #2, 9 pp. [arXiv:2502.14596]
- P7.** An uncertainty principle for Möbius inversion on posets. To appear in *Contributions to Discrete Mathematics*. [arXiv:2302.02466]
- P6.** (with Jonah Saks) On the homology of several number-theoretic set families. *Enumerative Combinatorics and Applications* **4**,2 (2024), #S2R12, 11 pp. [arXiv:2206.12535]
- P5.** (with Jad Hamdan and Jonah Saks) The lattice of arithmetic progressions. *Australasian Journal of Combinatorics* **84**,3 (2022), 357–374. [arXiv:2106.05949]
- P4.** (with Luc Devroye and Rosie Y. Zhao) On the peel number and the leaf-height of a Galton–Watson tree. *Combinatorics, Probability and Computing* **32**,1 (2023), 68–90. [arXiv:2106.14389]

P3. (with Anna M. Brandenberger, Luc Devroye, and Rosie Y. Zhao) Leaf multiplicity in a Bienaymé–Galton–Watson tree. *Discrete Mathematics and Theoretical Computer Science* **24**,1 (2022), #7, 16 pp. [arXiv:2105.12046]

P2. (with Anna M. Brandenberger and Luc Devroye) Root estimation in Galton–Watson trees. *Random Structures and Algorithms* **61**,3 (2022), 520–542. [arXiv:2007.05681]

P1. (with Rosie Y. Zhao) Arithmetic subsequences in a random ordering of an additive set. *Integers: Electronic Journal of Combinatorial Number Theory* **21** (2021), #A89, 19 pp. [arXiv:2012.12339]

SUBMITTED

- (with Hamed Hatami) Block structure in boolean matrices of small factorization norm. arXiv:2507.00872 (2025), 14 pp.
- On an entropic analogue of additive energy. arXiv:2406.18798 (2025), 19 pp.

REPORTS AND THESES

R5. Structural properties of conditional Galton–Watson trees. M.Sc. thesis, McGill University (Montréal, Québec, August 2022), vi + 75 pp.

R4. Finding regularity in Tlingit verb prefixes. Semester project report, McGill University (Montréal, Québec, April 2021), 7 pp.

R3. Grid-building algorithms on manifolds. Summer research report, McGill University (Montréal, Québec, August 2020), 10 pp.

R2. Typechecking proof scripts: making interactive proof assistants robust. Honours project report, McGill University (Montréal, Québec, December 2019), 10 pp.

R1. The OPytn programming language. Software project report, Charles University (Prague, Czech Republic, June 2019), 10 pp.

INVITED TALKS

- Block complexity and idempotent Schur multipliers. 7 December 2025, CMS Winter Meeting, Toronto.

PUBLISHED CREATIVE WRITING (* indicates nonfiction)

F5. “Syazwani,” *The Ex-Puritan* **71** (2025), online.

***F4.** “Lanterns,” *The Malahat Review* **229** (2025), 7–13. Winner of the 2024 Constance Rooke Creative Nonfiction Prize. Honourable Mention in the Personal Journalism category of Canada’s 2025 National Magazine Awards.

F3. “Senang Diri,” *Existere* **42**,2 (2023), 17–25.

F2. “The Vigil,” *Ricepaper Magazine* (2023), online. Reprinted in *Best Canadian Stories 2025* (Windsor, Ont.: Biblioasis, 2024), 244–253. Reprinted in *Infusion* (Toronto, Ont.: Dark Helix Press, 2025), 37–47.

F1. “Mountain Pass,” *Prairie Journal of Canadian Literature* **79** (2023), 48–55.

WORK AND VOLUNTEER EXPERIENCE (* indicates a paid position)

Editor-in-Chief

Ahoy Literary Magazine

December 2023 – present

Montréal, QC, Canada

Founding member and one of two directors of a non-profit organization that publishes poetry, prose, and art in a semiannual print magazine. In charge of English short fiction submissions as well as the overall typesetting. Share duties with other editors related to emails, sales, and magazine launches.

*Teaching assistant <i>McGill University</i>	September 2021 – present Montréal, QC, Canada
Teaching assistant in the following courses. Duties include giving tutorials, holding office hours, and grading assignments and exams.	
<ul style="list-style-type: none"> • Fall 2025: MATH 242 Analysis 1 • Winter 2024, Fall 2023: MATH 240 Discrete Structures • Fall 2021: COMP 690 Probabilistic Analysis of Algorithms 	
*Course lecturer <i>McGill University</i>	August – December 2024 Montréal, QC, Canada
Instructor for a section of MATH 240 Discrete Structures. Duties included preparing and delivering lectures, designing assignment and exam questions, and holding office hours.	
DRP Mentor <i>Department of Mathematics and Statistics, McGill University</i>	January 2022 – April 2024 Montréal, QC, Canada
Met with undergraduate students as part of the Directed Reading Program on a weekly basis to give them an introduction to research-level mathematics in a casual setting.	
<ul style="list-style-type: none"> • Winter 2024: Topics in additive combinatorics, with a particular focus on Roth's theorem. • Winter 2022: Topics in extremal combinatorics related to the increasing triples problem, as well as topics related to Khovanskii's theorem. 	
*After school care supervisor <i>Suzuki Charter School</i>	January – June 2023 Edmonton, AB, Canada
Supervised and facilitated activities (e.g., arts and crafts, soccer, board games, drawing/colouring, movie days) for children in grades 1 through 6.	
*Software developer <i>Levven</i>	January – May 2023 Edmonton, AB, Canada
Developed firmware for the manufacture and function of in-home IoT gateways, smart switches, and related electronic products. Worked primarily in C and Python. Contributed to the open-source Mongoose OS codebase.	
*Visiting teaching assistant <i>Bocconi University</i>	July 2022 Como, CO, Italy
Teaching assistant for a two-week summer school on random structures and combinatorial statistics, which was organised by Bocconi University in collaboration with Oxford University and Imperial College London. Led problem sessions in the afternoons, with around forty graduate-level students in attendance.	
First responder <i>McGill Student Emergency Response Team</i>	October 2017 – September 2021 Montréal, QC, Canada
On call on a weekly basis to provide emergency medical care at campus residences overnight as well as at university events such as frosh, sports games, and formals. Attended team training sessions twice a month to keep first-aid skills up-to-date. Most recent first responder certification: September 2020.	
*Grader <i>Department of Mathematics and Statistics, McGill University</i>	September 2019 – April 2021 Montréal, QC, Canada
Graded assignments in the following courses:	
<ul style="list-style-type: none"> • Winter 2021: MATH 457 Honours Algebra 4 • Fall 2020: MATH 323 Probability, MATH 456 Honours Algebra 3 • Winter 2020: MATH 240 Discrete Structures • Fall 2019: MATH 235 Algebra 1 	

*Helpdesk tutor	September 2018 – April 2021
<i>Computer Science Undergraduate Society Helpdesk</i>	<i>Montréal, QC, Canada</i>
Held twice-weekly office hours to tutor students in a variety of undergraduate courses. Topics covered included elementary data structures and algorithms, command-line scripting, and functional programming. Recipient of the Tomlinson Engagement Award for Mentoring.	
Vice President, Academic	May 2019 – January 2020
<i>Society of Undergraduate Mathematics Students</i>	<i>Montréal, QC, Canada</i>
Oversaw academic affairs within SUMS council and acted as liaison between the undergraduate community and mathematics faculty. Duties included representing the student body at department meetings, organising midterm and final review sessions, and helping students with academic concerns.	
*Painter	May – August 2018
<i>Bakir Contracting Corp.</i>	<i>Edmonton, AB, Canada</i>
Exterior painting (siding, decks, fences, trim, etc.) for residential clients.	
*Infantryman	August 2015 – August 2017
<i>Singapore Armed Forces</i>	<i>Singapore</i>
Held appointment of machine-gun team commander in the 3rd Battalion, Singapore Infantry Regiment. Led a six-person team consisting of a medic, signaller, sensor, and two-machine gunners within a rifle platoon. Most recent reserve training: December 2022.	
*Tutor	September 2014 – June 2015
<i>École Secondaire Beaumont Composite High School</i>	<i>Beaumont, AB, Canada</i>
Tutored various students in grades 4 through 11 in chemistry, physics, math, and French.	
*Summer camp counsellor	June – August 2014
<i>YoWoChAs Outdoor Education Centre</i>	<i>Fallis, AB, Canada</i>
Led children aged 4–15 through various activities (e.g., archery, canoeing, zipline) at a sleepaway camp.	

SKILLS

Programming Languages

C, OCaml, Python, Java, PostScript, Haskell, Scheme Lisp, Standard ML, CWEB, MIXAL, MIPS Assembly.

Technologies

UNIX, Vim, TeX, Git.

Languages

Fluent: English, French. Proficient: Mandarin, Italian.

OTHER

- Recipient of 0x\$3.40 in Knuth reward cheques.
- Contributed sequences A335562, A338550, A338993, A339941, A339942, A341822, A347580, A355145–A355147, and A360285 to the On-line Encyclopedia of Integer Sequences.