

## Education

- 2024- **PhD in Mathematics**, *North Carolina State University*.
- 2021-2024 **M.Sc. in Pure Mathematics**, *Université de Montréal*.
  - Supervisor: Marlène Frigon
  - Research in fixed point theory and Stieltjes differential equations
- 2018-2021 **B.Sc. in Pure and Applied Mathematics**, *Université de Montréal*.
- 2016-2018 **Diploma of College Studies in Computer Science and Mathematics**, *Collège de Maisonneuve*.
- 2011-2016 **IB Middle Years Programme Certificate**, *École d'éducation internationale - McMasterville*.
  - Obtention of the Diplôme d'éducation secondaire internationale (DÉSI) from SÉBIQ

## Academic Work Experience

### Teaching

- 2024- **Teaching Assistant**, *North Carolina State University*.
  - MA 141: Calculus 1 (Fall 2024)
- 2020-2024 **Teaching Assistant**, *Université de Montréal*.
  - MAT 2100: Analysis 3 (Winter 2024)
  - MAT 1000: Analysis 1 (Fall 2022, Winter 2024)
  - MAT 2466: Applied Analysis (Fall 2022)
  - MAT 1923: Integral Calculus (Winter 2022)
  - MAT 2050: Analysis 2 (Fall 2021)
  - MAT 1680: Symbolic Calculation and Applications (Fall 2020, Fall 2021)
  - MAT 1681: Computer Assisted Mathematics (Fall 2020)
- 2017-2018 **Tutor**, *Collège de Maisonneuve*.
  - Tutoring and monitoring in mathematics and physics

### Research

- 2019 **Research Student Intern**, *Université de Montréal*.
  - Supervisor: Iosif Polterovich
  - Research project: Sloshing problem on a triangular prism in order to find an asymptotic of the eigenvalue counting function
  - Spectral geometry, partial differential equations
- 2018 **Research Student Intern**, *Laboratoire de recherche informatique Maisonneuve*.
  - Supervisor: Jihene Rezgui
  - Research project: Traffic sign recognition using neural networks
  - Neural network, image recognition

## Publications

1. Marlène Frigon and Julien Mayrand, *Existence results for systems of first-order Stieltjes differential equations via the method of  $g$ -solution-regions*, preprint.
2. Julien Mayrand, Charles Sénécal, and Simon St-Amant, *Asymptotics of sloshing eigenvalues for a triangular prism*, *Mathematical Proceedings of the Cambridge Philosophical Society* **173** (2022), no. 3, 539–571
3. Jihene Rezgui, Amal Hbaieb, Lamia Chaari, and Julien Mayrand, *Traffic Sign Recognition Using Neural Networks Useful for Autonomous Vehicles*, 2019 International Conference on Smart Applications, Communications and Networking (SmartNets), 2019, pp. 1–6

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## Prizes and Scholarships

- 2024 **University Graduate Fellowship**, *North Carolina State University*.
- 2022-2024 **Université de Montréal Fund Scholarship**, *Université de Montréal*.
- 2019 **Undergraduate Student Research Award**, *NSERC*.
- 2018 **Mathematics Department Prize in Computer Science and Mathematics**, *Collège de Maisonneuve*.
  - Awarded to the student with the best grade average in their mathematics courses for their program of study
- 2018 **Medal of Honor - Euclid Mathematics Contest**, *University of Waterloo*.
  - Awarded to the student with the best result in the Euclid Mathematics Contest from Collège de Maisonneuve

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## Presentations

- August 2019 **Prisms, angles, a sloping beach and the sloshing of waves**, *Club mathématique de l'Université de Montréal*.
- July 2019 **Sloshing problem on a triangular prism in order to find an asymptotic of the eigenvalue counting function**, *Canadian Undergraduate Mathematics Conference*.

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## Additional Activities

- 2019 **Volunteer Organizer**, *Université de Montréal*.
  - Organization and responsibility of the Hackathon 2019 of the Université de Montréal
  - Participation in the 2017 and 2018 editions
- 2018-2022 **Captain of the Université de Montréal's League of Legends Team**, *Université de Montréal*.
- 2011-2018 **Participant in Mathematical Contests**.
  - Participation and good placement in numerous mathematical contests, such as Putnam, Euclid, AMC12, AMQ, AQJM, Opti-Math
- 2011-2016 **Volunteer**.
  - Volunteer involvement within the framework of the IB Middle Years Programme
  - Contribution to Christmas charity drives: door-to-door collections, donated goods organization and monetary contributions management
  - Musical performances with the school music band, playing guitar and saxophone, in senior centers

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## Languages

- French **Native Language**.
- English **Fluent**.
  - TOEFL Score of 115/120
- Spanish **Basic**.

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## Programming Knowledge

- Advanced Mathematica, Java
- Intermediate  $\LaTeX$ , HTML, JavaScript
- Basic Python, C, C#, CSS