

## Education

- 2020- **PhD in Mathematics of Information**, *University of Cambridge*.
  - Under the supervision of Prof. Gabriel Paternain.
  - Research in geometric inverse problems.
  - Member of Clare Hall College.
- 2018-2020 **M.Sc. in Pure Mathematics**, *Université de Montréal*.
  - Thesis : [Le problème de Steklov paramétrique et ses applications](#) [The parametric Steklov problem and its applications].
  - GPA : 4.3/4.3.
  - Under the supervision of Prof. Iosif Polterovich.
  - Research in spectral geometry.
  - Rector's honour list.
- 2015-2018 **B.Sc. in Pure and Applied Mathematics**, *Université de Montréal*.
  - GPA : 4.27/4.3.
  - Dean's list 2015-16, 2016-17, 2017-2018.
- 2013 - 2015 **Diploma of Collegial Studies in Computer Science and Mathematics**, *Collège Bois-de-Boulogne*.
  - R-Score: 35.450; Average mark: 90.2%.
  - Final project: Programming a chess game for Android.

## Publications *(Authors are in alphabetical order)*

- S. St-Amant. [Stability estimate for the broken non-abelian X-ray transform in Minkowski space](#). *Inverse Problems*, 38(10):105007, 2022.
- J. Mayrand, S. Sénécal, and S. St-Amant. [Asymptotics of sloshing eigenvalues for a triangular prism](#). *Mathematical Proceedings of the Cambridge Philosophical Society*, pages 1–33, 2021.
- J. Lagacé and S. St-Amant. [Spectral invariants of Dirichlet-to-Neumann operators on surfaces](#). *Journal of Spectral Theory*, 11(4):1627–1667, 2021.
- P. M. Gauthier, T. Ransford, S. St-Amant, and J. Turcotte. [Approximation by random complex polynomials and random rational functions](#). *Ann. Polon. Math.*, 123(1):267–294, 2019.
- S. St-Amant. [Un aperçu de la géométrie spectrale](#) [An overview of spectral geometry]. *Journal étudiant en mathématique de l'Université de Montréal (JÉMUM)*, 2017.

## Presentations

### **Bayesian inverse problems research group.**

- Inverse problems related to the Seiberg-Witten equations (2022).
- Dealing with the gauge of the broken non-abelian X-ray transform (2022).
- Spectral invariants of Dirichlet-to-Neumann operators on surfaces (2020).

### **CMI $S^3$ seminar.**

- On an inverse problem with a gauge (2022).

### **University of Helsinki inverse problems seminar.**

- A stability estimate for the broken non-abelian X-ray transform in Minkowski space (2022).

### **Club mathématique de l'Université de Montréal.**

- [The mathematics of X-rays and inverse problems](#) (2021).
- [Where is Joseph?](#) (2020).
- [A problem to rule them all](#) (2019).
- [Euclid the builder](#) (2018).
- [An approximate proof in complex approximation](#) (2017).
- [Geometric construction of isospectral non-isometric domains](#) (2016).

### **Symposium Annuel de Mathématiques pour un Avenir en Recherche et en Industrie (SAMARI).**

- [Spectral theory at Université de Montréal](#) (2021).
- [Spectral invariants of the parametric Steklov problem](#) (2020).
  - Winner of the poster contest.

### **CMI student seminar.**

- [Geometric spectral invariants](#) (2020).

### **Spectral geometry seminar of Université de Montréal.**

- [Complete spectral asymptotics for a parametric Dirichlet-to-Neumann operator on surfaces](#) (2019).
- [Robin and Steklov isospectral manifolds](#) (2018).

### **Séminaire étudiant en mathématiques de l'Université de Montréal.**

- [Why differentiate when you can multiply?](#) (2019).

### **Canadian Undergraduate Mathematics Conference (CUMC).**

- [Approximately complex](#) (2017).

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## **Academic Work Experience**

### **Teaching**

- 2020- **Undergraduate supervisor**, *University of Cambridge*.
- [IB Complex analysis for Girton College](#) (Lent 2022).
  - [IB Analysis and Topology for Clare College](#) (Michaelmas 2020).
- 2017-2020 **Teaching assistant**, *Université de Montréal*.
- [MAT1000 : Real analysis 1](#) (Summer 20, Fall 19, Winter 19, Fall 18).
  - [MAT1600 : Linear algebra](#) (Winter 18).
  - [MAT2466 : Fourier analysis](#) (Fall 17).
- 2013-2015 **Tutor**, *Collège Bois-de-Boulogne*.
- Over 200 hours of tutoring in mathematics, physics and computer science.

### **Research**

- 2017 **Student intern**, *Université de Montréal*.
- Under the supervision of Professor Paul M. Gauthier.
  - Research project: [Approximation on Jordan domains by random functions](#).
  - Several complex variables, measure theory, set theory.
- 2016 **Student intern**, *Université de Montréal*.
- Under the supervision of Professor Iosif Polterovich.
  - Research project: [Hearing the shape of a triangle from the Steklov spectrum](#).
  - Spectral geometry, partial differential equations, analysis.

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## **Prizes and Scholarships**

- 2020-2024 **Cambridge Trust Scholarship**, *Cambridge Trust*.
- Covers my PhD's tuition fees.
- 2020-2024 **PhD studentship**, *Cantab Capital Institute for the Mathematics of Information (CCIMI)*.
- 2020-2023 **Postgraduate Scholarship**, *Natural Sciences and Engineering Research Council of Canada (NSERC)*.

- 2020-2023 **Canada Graduate Scholarship, NSERC.**  
 ○ Scholarship refused, because not applicable outside of Canada.
- 2019-2020 **Master's Research Scholarship, Fonds de recherche du Québec - Nature et technologies (FRQNT).**
- 2018-2019 **Canada Graduate Scholarship-Master's, NSERC.**
- 2018 **Georges-Baril Scholarship, Université de Montréal.**  
 ○ Awarded to the most promising student among all the students enrolled in the Arts and Science Faculty at Université de Montréal and admitted to a master's degree program in science.
- Jean-Miranda Prize, Université de Montréal.**  
 ○ Awarded to the best graduating student in pure and applied mathematics.
- Étoile académique du sport d'excellence des Carabins , Université de Montréal.**  
 ○ Awarded to student athletes demonstrating academic excellence.
- 2017 **Undergraduate Student Research Award, NSERC.**  
**Supplement of the NSERC Undergraduate Student Research Award, FRQNT.**
- Maurice-L'Abbé Prize, Université de Montréal.**  
 ○ Awarded to the best student in mathematics at the halfway point of their undergraduate studies.
- Étoile académique du sport d'excellence des Carabins , Université de Montréal.**  
 ○ Awarded to student athletes demonstrating academic excellence.
- 2016 **Undergraduate Student Research Award, NSERC.**  
**Supplement of the NSERC Undergraduate Student Research Award, FRQNT.**
- 2015 **Scholarship in Mathematics, Collège Bois-de-Boulogne.**  
**Best Male Athlete, Collège Bois-de-Boulogne.**

## Extracurricular Activities

- 2021- **Badminton player for the Cambridge University Badminton Club.**  
 ○ Co-captain of the 2022-23 men's team.
- 2021- **Member of the Clare Hall chess team.**
- 2021-2022 **Sports Officer for the Clare Hall Graduate Student Body.**
- 2016-2018 **Organising committee member of the Club Mathématique de l'Université de Montréal.**  
 ○ Organise weekly presentations for undergraduate students in mathematics.
- 2016-2018 **Badminton player for the interuniversity team the Carabins de l'Université de Montréal.**

## Languages

- French **First language.**
- English **Advanced level, spoken and written.**  
 ○ IELTS Band score 8.

## Technical skills

Mathematica	Advanced	$\LaTeX$	Intermediate
Java	Advanced	MATLAB	Beginner
Python	Intermediate	HTML	Beginner