

## Education

- **Ph.D. in Mathematics** 2019 – Today  
*Concordia University, Montréal*
  - Interests: Computational Number Theory, Elliptic curves, Function fields
  - Supervisor: Giovanni Rosso
- **M.A. in Mathematics** 2017 – 2019  
*Université Laval, Québec*
  - Interests: Computational Number Theory, Modular forms, Class numbers
  - Supervisor: Antonio Lei
- **B.A. in Mathematics with honours** 2014 – 2017  
*Université Laval, Québec*

## Programming and Software skills

- Programming: Python, C++, WeBWorK, PERL
- Software: SageMath, PARI/GP, Matlab, Microsoft Office Suite
- Github: [github.com/DavidAyotte](https://github.com/DavidAyotte)

## Experiences

- **Python Developer for SageMath mathematical software** 2021 – Today  
*Google Summer of Code (Summer 2021), Voluntary basis (since Fall 2021)*
  - In summer 2021, I participated in the Google Summer of Code (GSoC) where I worked as a student programmer for the open-source mathematical software SageMath. I blogged about my experience on my website.
  - My contributions include: code reviews, bug fixes and new enhancements.
- **Teaching assistant** 2016 – 2021  
*Université Laval and Concordia University*
  - Assistant in two linear algebra courses and one advance algebra course (ring theory)
  - Solve problems on the blackboard in front of a class
  - Help student individually through personal meetings, a forum or emails
- **WeBWorK assistant** 2017 – 2019  
*Université Laval, Québec*
  - Learned how to use the WeBWorK language (based on PERL)
  - Programmed more than a hundred automated random problems for two courses
  - Wrote a guide based on my experiences and learning of the platform for the future WeBWorK users of UL

- **Sage Days 87 workshop:  $p$ -adics in Sage and the LMFDB** July 2017 (1 week)  
*University of Vermont, Burlington, USA*
  - Learned how to develop the python-based open-source software Sagemath
  - Contributed to the software by fixing bugs and reviewing codes
  - Worked in collaboration with various students and researchers from around the world
- **Summer research projects** Summer 2015, 2016 and 2017  
*Université Laval, Québec*
  - Carried out numerical calculation on different advanced math concepts such as the class number of cyclotomic fields and the symmetric square  $L$ -function of a modular form
  - Worked in collaboration with another researcher (Prof. Antonio Lei) and graduates students
  - Wrote a paper on properties of supersingular Weyl polynomials (summer 2015)
  - Programmed using specialized software in mathematics such as Maple and SageMath to obtain numerical results

## Publications

- Ayotte D., *Relations entre le nombre de classes et les formes modulaires*, Master's thesis, 63 pages, 2019
- Ayotte D. and Lei A. and Rondy-Turcotte J.-C., *On the parity of supersingular Weil polynomials*, Archiv der Mathematik, 6 pages, February 2016.

## Scholarships and Awards

- FRQNT Doctoral research scholarship . . . . . 2020 to 2023
- Concordia School of Graduate Studies top-up funding . . . . . 2020
- Teaching assistant scholarship of the Mathematics Department at U. Laval . . . . . 2017
- Mention on the roll of honour of the Mathematics Department at U. Laval . . . . . 2016 and 2017
- NSERC undergraduate summer scholarship . . . . . 2016
- FRQNT supplement to the NSERC undergraduate summer scholarship . . . . . 2016
- ISM undergraduate summer scholarship . . . . . 2015

## Other Interests and Volunteering

- **Member of the Club de Triathlon de l'Université Laval** 2016 – 2018  
*Université Laval, Québec, Canada*
- **Lifeguard and swimming instructor** 2011 – 2014  
*Roberval, Canada*
- **Volunteer as a lifeguard for the Traversée Internationale du lac St-Jean** 2011 – 2015  
*Roberval, Canada*
- **Cyclist for the Fondation des Pompiers du Québec pour les Grands Brûlés** 2011  
*La Baie – Roberval, Canada*