

Education

- **Ph.D. in Mathematics** 2019 – Today
Concordia University, Montréal
 - Interests: Computational and arithmetic aspects of Drinfeld modular forms
 - Supervisor: Giovanni Rosso
- **M.A. in Mathematics** 2017 – 2019
Université Laval, Québec
 - Interests: 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, Bash, \LaTeX , C++
- Software: git, SageMath, PARI/GP, WeBWorK, Visual Studio Code, GNU/Linux, WSL2
- Github: github.com/DavidAyotte

Experiences

- **SageMath Developer** 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. I now work on a voluntary basis
 - My contributions include: new enhancements (quasimodular forms), bug fixes and code reviews
- **Teaching assistant** 2016 – Today
Université Laval and Concordia University
 - eConcordia teaching assistant involving answering questions on a forum, via email or Zoom
 - Assistant in two linear algebra courses, one advanced algebra course (ring theory) and the math help center at ULaval
- **WeBWorK assistant** 2017 – 2019
Université Laval, Québec
 - WeBWorK is an online homework delivery system allowing questions with randomly generated parameters with automated marking
 - I scripted (WeBWorK language, based on PERL) a number of questions (> 100) and assisted the students and professors in the usage of the platform

- **Sage Days 87 workshop: p -adics in Sage and the LMFDB** July 2017 (1 week)
University of Vermont, Burlington, USA
 - One-week workshop focused on developing specialized functionalities in the SageMath open source software
 - I learned the basics of the development process of SageMath (Reports, coding, testing and reviewing)
- **Undergraduate 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

- **Open Source Developer for SageMath (volunteering)** 2021 – Today
Online
- **PADI open water diver certified** 2021
Montréal, QC, Canada
- **Member of the Club de Triathlon de l'Université Laval** 2016 – 2018
Université Laval, QC, Canada
- **Lifeguard for the Traversée Internationale du lac St-Jean (volunteering)** 2011 – 2015
Roberval, Canada
- **Lifeguard and swimming instructor (paid work)** 2011 – 2014
Roberval, Canada
- **Défi de la Fondation des Pompiers du Québec pour les Grands Brûlés** 2011
Raise funds and bike from Saguenay (La Baie) to Roberval