

## EDUCATION

---

### University of Vermont

Ph.D. in Mathematical Sciences, Advisor: Dr. Christelle Vincent

GPA: 3.74/4.00

Burlington, VT

Anticipated May 2024

- Dissertation (In Progress): Ring Learning with Errors as a candidate for safe encryption against quantum computers.
- Course Work: Abstract Algebra III, Abstract Algebra IV, Algebraic Topology, Measure Theory, Complex Analysis, Topics in Combinatorics, Algebraic Number Theory, Algorithm Design and Analysis, Algebraic Curves and Surfaces, Elliptic Curves and Modular Forms, Algebraic Theory of Differential Equations.

### Bridgewater State University

B.S. in Mathematics - Concentrations in Pure Math and Statistics - Minor in Computer Science

GPA: 3.97/4.00

Bridgewater, MA

May 2019

- Thesis: “Firefighter Problem Played on Infinite Graphs” under the supervision of Dr. Rachel Stahl.
- Course Work: Single Variable Calculus I and II, Transition to Advanced Mathematics, Linear Algebra, Multivariable Calculus, Abstract Algebra I and II, Graph Theory, Differential Equations, Real Analysis I and II, Applied Math, Statistical Methods I and II, Probability Theory, Regression Analysis, Mathematical Statistics, Computer Science I and II, Intro to Computer Organization, Data Structures and Algorithms, Organization to Programming Languages, Introduction to Databases.

## EXPERIENCE

---

### The Education Annex

Tutor

- Tutor and mentor elementary, middle, and high school students within the Winooski School District in mathematics, reading, and writing.
- In-person and remote sessions.

Williston, VT

April 2022 - present

### Akamai Technologies, Inc.

Software Engineering Intern

- Converting Radix Tree from C++ to Python for analysis purposes in the Mapping Department.
- Profile the code for optimization.
- Utilize unit tests in Python to validate the outcome with expected results.

Cambridge, MA

Summer 2019

### Bridgewater State University

Equipment Room Supervisor

- Assist the Athletic Department through interactions with the school community; answering phone calls, handling equipment rentals, setting up equipment, organizing deliveries, etc.
- Responsible for training new employees.

Bridgewater, MA

September 2015 - May 2019

## TEACHING

---

**Graduate Teaching Assistant** at the University of Vermont, Burlington, VT

Fall 2019 - present

Primary instructor for College Algebra (Math 009), Pre-Calculus (Math 010), Fundamentals of Calculus I (Math 019). Experience teaching in-person, hybrid, and remote.

- Grader** at the University of Vermont, Burlington, VT Spring 2023  
Grader for Cryptography (Math 259)
- Grader** at the University of Vermont, Burlington, VT Spring 2020  
Grader for Topology (Math 295)
- Teaching Assistant** at Bridgewater State University, Bridgewater, MA Fall 2018 - Spring 2019  
Problem Solving in Math (Math 143).
- Teacher's Aide** at P.A.C.E. Head Start, New Bedford, MA August 2014 - June 2015  
Plan and assist daily lessons and activities for children ages 3-5 years old. Ensure a safe and stimulating learning environment.

## RESEARCH

---

- University of Vermont** Burlington, VT  
Graduate Research Assistant Summer 2020 and Summer 2021
- Ring Learning with Errors (RLWE)
  - Explore background in Algebraic Number Theory. Compare non-dual RLWE, dual RLWE, and PLWE (Polynomial Ring Learning with Errors) problems. Implement attacks in SageMath to determine conditions for which fields are safe/unsafe.
  - Advise undergraduate student while researching and writing Honors Thesis.
- Bridgewater State University** Bridgewater, MA  
Undergraduate Honors Thesis Fall 2018 - Spring 2019
- “Firefighter Problem Played on Infinite Graphs”
  - Explore infinite graphs within the rules of the game, the Firefighter Problem, generalizing known results with additional requirements to the problem.
- Louisiana State University** Baton Rouge, LA  
Research Experience for Undergraduates (REU) Summer 2018
- “Developing a Neural Natural Language Generation Approach for a Medical Spoken Dialogue System with PyTorch”
  - Research topics of Machine Learning, incorporate Recurrent Neural Networks and Encoder-Decoder Approach with Long Short-Term Memory and Attention.
- Bridgewater State University** Bridgewater, MA  
Undergraduate Honors Contract Fall 2017
- “Simple Random Walks“
  - Implementing the Ballot Theorem, the Reflection Principle, Recurrent and Transient, Arcsine Laws, Stirling's Formula, Borel-Cantelli Part I.

## SKILLS

---

- **Programming Languages:** Python, Java, C++, R, MySQL, SageMath.
- **Certifications:** EEC Preschool Teacher.

## PRESENTATIONS AND TALKS

---

- AGNES at University of Massachusetts Amherst November 2022
- Math Chats at Bridgewater State University May 2019
- MassURC at University of Massachusetts Amherst April 2019
- Math Chats at Bridgewater State University May 2018
- StARS Symposium at Bridgewater State University April 2018
- Mid-Year Symposium at Bridgewater State University May 2016

## CONFERENCES AND WORKSHOPS

---

- Career Mobility Committee, SACNAS, Women in STEM, and oSTEM - University of Vermont March 14, 2023  
*Leading with Emotional Intelligence in STEM*
- Center for Teaching and Learning - University of Vermont December 15, 2022  
*You Don't Have to Grade Like That! Exploring Grading Alternatives*
- AGNES - Algebraic Geometry Northeastern Series November 18, 2022 - November 20, 2022  
*University of Massachusetts Amherst*
- Community-building in the Langlands Program Conference August 13, 2022 - August 19, 2022  
*Hausdorff Center For Mathematics, Bonn, Germany - Remote participation*
- Equidistribution and Arithmetic Dynamics Conference June 20, 2022 - June 24, 2022  
*Oklahoma State University - Remote participation*
- AMS MRC Models and Methods for Sparse (Hyper)Network Science June 5, 2022 - June 11, 2022  
*Information Loss in Weighted Hypergraph Line Graphs*
- The Inclusive STEM Teaching Project March 23, 2022 - May 12, 2022  
*edX Teaching Course*
- BIRS-CMO Workshop April 24, 2022 - April 29, 2022  
*Algebraic Methods in Coding Theory and Communication*
- Center for Teaching and Learning - University of Vermont March 1, 2022  
*Increasing Student Motivation: Strategies that Work with Guest Speaker Dr. Saundra McGuire*
- Center for Teaching and Learning - University of Vermont February 22, 2022  
*Teach STEM Students How to Learn: Metacognition is the Key! with Guest Speaker Dr. Saundra McGuire*
- Center for Teaching and Learning - University of Vermont October 5, 2021 - November 8, 2021  
*Equity-Centered Trauma-Informed Education, by Alex Shevrin Venet Book Group*
- Center for Teaching and Learning - University of Vermont September 13, 2021  
*But I'm Not a Writing Teacher! - Teaching Writing in Your Discipline*
- MSRI Summer Graduate School Participant June 7, 2021 - June 18, 2021  
*Sparsity of Algebraic Points*
- Center for Teaching and Learning - University of Vermont May 20, 2021  
*Contemplative Practices for Anti-Racist Education and Trauma Informed Teaching, with Guest Speaker Dr. Kamilah Majied*
- Center for Teaching and Learning - University of Vermont May 19, 2021  
*Teaching with Teams*
- Center for Teaching and Learning - University of Vermont April 30, 2021  
*Writing Your Teaching Philosophy*
- Center for Teaching and Learning - University of Vermont March 19, 2021

### *Teaching in Higher Education*

- Center for Teaching and Learning - University of Vermont March 18, 2021  
*Having Fun and Grabbing Interest in Large Remote Classes*
- Continuing and Distance Education - University of Vermont July 7, 2020 - July 20, 2020  
*Online Teaching Boot Camp*

## LEADERSHIP AND SERVICE

---

- Women in STEM - University of Vermont March 2023 - present  
*Club member.*
- Graduate Teaching Program - University of Vermont January 2021 - December 2022  
*Graduate College, Center for Teaching and Learning, Writing in the Disciplines Program*  
Develop professional skills for a career in higher education.
- Peer Leader - Bridgewater State University Fall 2018 - Spring 2019  
*Advise and support first year STEM students.*
- Group Leader for the CPDC - Bridgewater State University Fall 2017 - Fall 2018  
*CPDC - Children's Physical Developmental Clinic*  
Worked with special needs children aged 3 - 18 years old promoting physical activities.
- Member of Pi Mu Epsilon Inducted Spring 2018  
*National Honorary Mathematics Society - Massachusetts Gamma Chapter*

## SCHOLARSHIPS AND AWARDS

---

- Nam Sang Kil Scholarship in Mathematics May 2023  
\* In recognition of the value of education as a path toward betterment of mankind, this scholarship is presented to an outstanding student in honor of Chairman Nam.
- Bruce and Patricia Bartlett Internship Scholarship June 2019
- James Fitzgerald Award May 2019  
\* For having the highest GPA in the mathematics graduating class.
- Outstanding Academic Achievement May 2019  
\* For the completion of Commonwealth Honors in Mathematics.
- Bridgewater State University Student of Excellence Award April 2019  
\* For demonstrating a holistic approach to learning by engaging in intellectual and personal growth opportunities both in and out of the classroom.
- ASA DataFest Winner: "Best Use of External Data" - Bridgewater State University March 2019
- Patricia Quinn Bartlett '67 Scholarship March 2018  
\* For undergraduate student's academic success.
- ASA DataFest Winner: "Best Use of External Data" - Bridgewater State University March 2018
- Dr. Marilyn Christian Federico '57 Scholarship March 2017
- Dr. Mary Moore Jarvis Scholarship October 2016