

Education

University of Notre Dame

PhD in Mathematics

Notre Dame, Indiana

August 2015 - May 2020

- Specialized in model theory. Studied model-theoretic Galois theory, differentially closed fields and the canonical base property.
- Thesis : "Internality in Families"
- Supervisor : Anand Pillay

Université Pierre et Marie Curie

Agrégation de Mathématiques

Paris, France

September 2014 - June 2015

- The most advanced french teaching diploma.
- Prepared many undergraduate lectures for my examination.

Université Pierre et Marie Curie

Mathematics Undergraduate and Master's degree

Paris, France

September 2009 - June 2014

Employment

The Ohio State University

Visiting Assistant Professor

Columbus, Ohio

August 2023 - Present

The Fields Institute and The University of Waterloo

Postdoctoral researcher

Toronto and Waterloo, Ontario

August 2021 - August 2023

- A joint postdoctoral contract funded by the Fields Institute and the University of Waterloo. The first year at the Fields Institute was part of the "Thematic Program on Trends in Pure and Applied Model Theory" and the "Thematic Program on Tame Geometry, Transseries and Applications to Analysis and Geometry".

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GeoMod Postdoctoral researcher

Lyon, France

September 2020 - August 2021

- A collaborative research project between France and Germany, with many themes in both pure and applied model theory.

University of Notre Dame

Graduate Student

Notre Dame, Indiana

August 2015 - May 2020

Publications and Prepublications

Publications:

- "Differential-algebraic permutation groups", with James Freitag and Rahim Moosa, Journal of the Institute of Mathematics of Jussieu, arXiv
- "Enriching a predicate and tame expansions of the integers" with Gabriel Conant, Christian D'Elbée, Yatir Halevi and Silvain Rideau-Kikuchi, Journal of Mathematical Logic, arXiv
- "Relative Internality and Definable Fibrations", with Anand Pillay and Rémi Jaoui, Advances in Mathematics, Volume 415 (2023), arXiv
- "CM-trivial structures without the canonical base property", with Thomas Blossier, Model Theory Vol. 1 (2022), No. 1, 31–54, arXiv
- "Groupoids and Relative Internality", Journal of Symbolic Logic, 84 (2019), 987-1006, arXiv

Accepted for publication:

- "Splitting differential equations using Galois theory", with Christine Eagles, accepted at Transactions of the American Mathematical Society, arXiv:2403.14900

Prepublications:

- "Domination, fibrations and splitting", with Christine Eagles, arXiv:2503.12274
- "Note on a differential algebra bound", arXiv:2412.06034
- "Internality of autonomous algebraic differential equations", with Christine Eagles, arXiv:2409.01863

Grants

- AMS-Simons travel grant, 2024-2026: \$2500 per year for two years to support research-related traveling.
- AIM-SQuaRES, February 2025: a fully funded week in California to collaborate with 4 other mathematicians. I was in charge of writing the project presentation.

Mentorship

The Ohio State University

Cycle program mentor

Columbus, Ohio
September 2024 - May 2024

- An undergraduate research program for students from groups underrepresented in mathematics programs.
- Mentoring one student.
- The theme of the project is to use methods coming from model theory to prove that solutions to classic systems of differential equations are not Liouvillian.

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Undergraduate Thesis Supervisor

Lyon, France
March 2021 - May 2021

- Supervised the writing of an undergraduate thesis. The theme was approximation of infinite structures by finite ones: ultraproducts, Fraïssé limits and zero-one laws.

Teaching

The Ohio State University

Lecturer

Columbus, Ohio
August 2023 - present

- Fall 2024: two sections of Foundations of Higher Mathematics.
- Fall 2023, Spring 2024: Foundations of Higher Mathematics.

University of Waterloo

Lecturer

Waterloo, Ontario
September 2022 - August 2023

- Winter 2023: Calculus 2 for Sciences.
- Fall 2022: Calculus 1 for Engineering.

University of Notre Dame

Lecturer

Notre Dame, Indiana

- Fall 2019: Beginning Logic, a symbolic logic course for humanities students. Gave three lectures a week, wrote and graded exams.
- Spring 2019: Calculus 2. Gave three lectures a week.

University of Notre Dame
Teaching Assistant

Notre Dame, Indiana

- Spring 2020: Calculus 2. Head TA. Tutorials and flipped classroom, both in person and online. Organized TA meetings and writing of tutorial exercises.
- Fall 2016, 2017, 2018: Calculus 3.

Administration and Service

University of Waterloo, CEMC
Grader for the Euclid Mathematics contest

Waterloo, Ontario
April 2023

University of Waterloo
Organizer of the logic seminar

Waterloo, Ontario
October 2022 - May 2023

City of Toronto
Community Stewardship Volunteer

Toronto, Ontario
Summer 2022

- Removal of invasive plant species in a park.

University of Notre Dame, Science Policy Initiative
Judge in the Northern Indiana Science Fair

Notre Dame, Indiana
February 2020

University of Notre Dame, Graduate Career Center
Graduate Assistant

Notre Dame, Indiana
October 2019 - April 2020

- Collected and organized data on Notre Dame's graduate students career paths.

Notre Dame Mathematics Graduates Students Association
Treasurer

Notre Dame, Indiana
August 2018 - May 2019

- Organized a weekly seminar for graduate students, allowing them to present their work in a laid back setting.

American Red Cross
Disaster Action Team, Financial and Statistical Information

South Bend, Indiana
August 2018 - July 2020

- Collected and analyzed data on home fires in Indiana. Used this to identify target areas for the Red Cross' recruitment efforts.
- Provided direct assistance to victims of domestic fires.

Presentations

Invited conference talks:

- June 2025: Workshop on Model Theory, Algebraic Dynamics, and Differential-Algebraic Geometry, the Fields Institute.
- May 2025: ASL Annual Meeting, New-Mexico State University.
- February 2025: Galois Differential Theories and Transcendence Conference, CIRM.
- November 2024: Mid-Atlantic Mathematical Logic Seminar Fall Fest, Rutgers University.
- May 2024: ASL Annual Meeting, Iowa State University.
- April 2024: AMS Spring Central Sectional Meeting, University of Wisconsin-Milwaukee.
- February 2023: Neostability Workshop, Banff International Research Station.
- July 2021: Workshop on Trends in Pure and Applied Model Theory, The Fields Institute.
- May 2019: Association for Symbolic Logic Annual North American Meeting, Model Theory Special Session. CUNY graduate center.

- October 2018: Neostability Theory Workshop, Casa Matemática Oaxaca.

Seminar talks:

- March 2025: Logic Seminar, Purdue University.
- November 2024: Logic seminar, University of Illinois Chicago.
- September 2024: Logic seminar, University of Southern Illinois, online.
- July 2024: Model theory seminar, University of Waterloo.
- November 2023: Logic seminar, University of Waterloo.
- November 2023: Unlikely intersection seminar, University of Illinois Chicago.
- September 2023: Kolchin Seminar in Differential Algebra, online.
- March 2023: Model theory seminar, University of Notre Dame.
- November 2022: Geometry and Model Theory Seminar, The Fields Institute.
- October 2021: Logic seminar, University of Illinois at Chicago.
- November 2019: Kolchin Seminar, CUNY Graduate Center.
- December 2017: Logic seminar, University of Waterloo.