

Research Interests

Applied mathematics in biology and health; mathematical modelling; probability theory; phylogenetics; phylodynamics; machine learning.

Professional Experience

Since 2023	CIRB (Collège de France) and LCQB (Sorbonne Université) Paris, France Ph.D candidate. Epidemiological parameter estimation from viral genomes with deep learning. Under the co-direction of Samuel Alizon (CIRB), Laurent Jacob (LCQB), and Anna Zhukova (Pasteur Institute)
2023 <i>April-September</i>	CIRB - Collège de France Paris, France MS2 internship. Deep learning for phylodynamics. Directed by Samuel Alizon and Laurent Jacob
2021 <i>May-August</i>	ETH Zürich (public research university) Zürich, Switzerland MS1 internship. Subcritical Poisson-Boolean percolation and asymptotic development. Directed by Vincent Tassion and Barbara Dembin
2020 <i>June-July</i>	Center of Mathematics Laurent Schwartz Paris, France End of BS degree internship. Introduction to the links between physics and group theory, Directed by Bertrand Rémy.

Education

Since 2023	Ph.D. in Machine Learning for Epidemiology LCQB / CIRB, Paris
2022-2023	Master 2 - Mathematics Vision Learning (MVA) ENS Paris-Saclay <u>Relevant coursework:</u> Reinforcement learning, Geometric data analysis, Convex optimization, Object recognition and computer vision, 3D Computer Vision, Deep Learning, Kernel Methods, Time Series, Inverse Problems in Medical Imaging, Generative models, Deep Learning in Practice
2022	Agrégation in Mathematics ENS de Lyon Ranked 36th out of 3000 students in the competitive examination for civil service in the French public education system in mathematics (Agrégation)
2021-2022	Master 2 FEADéP Mathematics ENS de Lyon Teacher Training, Accreditation and Professional Development. <u>Relevant coursework:</u> Analysis, Algebra, Geometry, Probability
2020-2021	Master 1 in advanced Mathematics ENS de Lyon <u>Relevant coursework:</u> Advanced algebra, Advanced analysis, Advanced Probabilities, Advanced Geometry, Stochastic processes, Statistics, PDEs
2019-2020	3rd year Bachelor's in Mathematics ENS de Lyon <u>Relevant coursework:</u> Algebra 1, Complex Analysis, Integration and measure theory, Topology and Differential Calculus, Algebra 2, Integration and Probabilities, Analysis and PDEs, Fundamental Group and covering spaces
2017-2019	MPSI-MP* Lycée Marcelin Berthelot, Saint-Maur-des-Fossés Higher School Preparatory Classes, admitted to Centrale Paris, Ecole Polytechnique, ENS de Lyon
2017	Scientific Baccalaureate Lycée Petit-Val, Sucy-en-Brie European Baccalaureate, with highest honors

Academic Projects

2021	Modelling project Modelling the evolution of COVID under a SIR model with adaptable parameters.	ENS de Lyon
2018-2019	Algebraic topology, PDEs project Modelling of percolation through porous materials thanks to algebraic topology and fluid mechanic discrete PDEs.	Lycée Marcelin Berthelot MP
2018-2019	Probability project Study of percolation in $\mathbf{Z}^d$, and proof of the continuity of percolation probability in $\mathbf{Z}^2 \times \mathbf{N}$.	Lycée Marcelin Berthelot MPSI

Teaching experience

2023-2025	Teaching Assistant in Mathematics 72 hours of teaching for second-year math undergraduate in Introduction to Probability Theory, 36 hours of teaching for last-year math undergraduate in Functional Analysis and 36 hours of teaching for last-year math undergraduate in Advanced Probability	Sorbonne Université
2019-2023	Private lessons in mathematics and physics for students of preparatory classes (PCSI/MP)	

Scientific Communication

2025 May	[Talk] 32nd International Dynamics and Evolution of Human Viruses France	Asnières-sur-Oise,
2024 Dec.	[Talk] LEGO Machine Learning for Genomics	Paris, France
2024 Nov.	[Talk] Biostatistics Days 2024	Paris, France
2024 Nov.	[Talk] Annual meeting of the Coordinated Action "Modelling infectious diseases" France	Rennes,
2024 Oct.	[Poster] Jacques Monod Conference on "Virus evolution: the mutualism-antagonism continuum of virus-virus interactions"	Roscoff, France
2024 Oct.	[Talk] Symposium AI in Biology and Health	Institut Pasteur, Paris, France
2024 May	[Talk] Research Group PHYLODYN	Montpellier, France
2024 May	[Talk] legend2024 : Machine Learning for Evolutionary Genomics Data	Heraklion, Greece
2023 Nov.	[Poster] LEGO BIM 2023	Lille, France
2023 Oct.	[Poster] ANRS AC Modélisation	Paris, France

Languages

French (*native*), English (*fluent*), German (*basics*)