

Samson Gourevitch

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Education

École Polytechnique , Palaiseau, France PhD on diffusion models advised by Eric Moulines and Alain Durmus	2025 – Present
École Normale Supérieure Paris-Saclay , Paris, France Master of Science in Mathematics, Vision, and Learning	2024 – 2025
<ul style="list-style-type: none">Specialized in machine and deep learning, computer vision, and statistical modeling.	
École Polytechnique , Palaiseau, France Master's level program in Applied Mathematics – GPA: 3.86	2021 – 2024
<ul style="list-style-type: none">One of France's top-ranking engineering schools.Relevant courses: Differential Calculus, Statistics, Markovian Processes, Monte Carlo Methods, Stochastic Calculus, Machine Learning, Optimization, Control Theory.	
Université Paris-Nanterre , Nanterre, France Bachelor's degree in Philosophy	2022 – 2023
<ul style="list-style-type: none">Emphasized strong analytical and critical thinking skills.	
École de l'Air et de l'Espace , Salon-de-Provence, France French Air Force Military Officer Diploma	2021
<ul style="list-style-type: none">Six-month training course combining theoretical and practical work.	
Lycée Pasteur , Neuilly-sur-Seine, France Scientific Baccalauréat – GPA: 4.0	2019 – 2021
<ul style="list-style-type: none">Awarded with highest honors.Followed by a two-year intensive preparatory course for competitive entrance exams to top French universities.Relevant courses: Physics (Mechanics, Thermodynamics, Waves, Electromagnetism), Mathematics (Algebra, Calculus, Probabilities), Theory of Informatics.	

Experience

Research Internship , InstaDeep – Paris, France, under the supervision of Frédéric Renard	March 2025 – September 2025
<ul style="list-style-type: none">Developed Reinforcement Learning models for protein structure generationCompared the performances of the RL methods to diffusion models using a set of custom metrics involving AlphaFold models	
Research Internship , Carnegie Institution for Science – Stanford, CA, under the supervision of Adrien Burlacot	March 2024 – August 2024
<ul style="list-style-type: none">Applied statistical and probabilistic frameworks to analyze gene expression data.Leveraged clustering and machine learning techniques to identify key genes involved in microalgal photosynthetic activity.Mapped significant genes to their biological roles, enhancing understanding of photosynthetic mechanisms.	
ESG Risk Analyst , ING Bank – Amsterdam, Netherlands	June 2023 – August 2023
<ul style="list-style-type: none">Developed quantitative statistical and machine learning models to assess climate-related financial risks.Built predictive models for ESG risk assessment, integrating economic and environmental indicators.	
Military Officer , French Air Force – Orléans, France	September 2021 – April 2022
<ul style="list-style-type: none">Participated in French Special Forces training, developing leadership and strategic decision-making skills.Managed administrative and IT operations for a military regiment.	

Math Tutor, Paris, France

2017 – 2021

- Provided private tutoring in mathematics to high school students and university applicants.

Projects

Categorical reparameterization with denoising diffusion models

ReDGE github repo

- Developed a new soft reparameterization method for categorical variables based on diffusion models.
- Implemented the resulting gradient estimator in a PyPi package `redge`

Insights into Gaussian Mixture Model Optimal Transport

GMM_OT github repo

- Reviewed the notion of Gaussian Mixture Model (GMM) Optimal Transport (OT) and its applications.
- Investigated the influence of the number of Gaussians on the quality of the transport map and the transported distribution.

Skills

Languages: French (mother-tongue), English (fluent), Russian (working knowledge), Japanese (beginner)

Programming languages: Python, Java, SQL, LaTeX, Pytorch

Interests

- **Music:** I have played the piano for more than 10 years and violin for 3 years.
- **Skydiving:** Obtained my sky-diving license in 2021.