

Mathias GRAU

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Final-year Master's student at *École Polytechnique* — *ENS Paris-Saclay* (MVA)

EDUCATION

- Université Paris-Saclay, Gif-sur-Yvette, France** Sept 2024 — July 2025
Master of Science, (*Master 2*), Mathematics Vision Learning (MVA)
 - Main courses : Probabilistic Graphical Models and Deep Generative Models, Geometric Data Analysis, Algorithms and learning for protein science, Reinforcement learning, Advanced learning for text and graph data ALTEGRAD, Inverse problems and imaging: statistical and stochastic approaches, Machine learning for time series, Computational statistics
 - Projects : Development of ML tools for 4 months in partnership with a doctor from Hôpitaux de Paris
- Ecole Polytechnique, Palaiseau, France** Sept 2021 — July 2025
Master of Science (*Cycle Ingénieur*), Applied Mathematics GPA : 3.83
 - Main courses : Advanced Machine Learning and Autonomous Agents, Statistics and Learning, Machine Learning and Deep Learning, Stochastic Processes, Monte Carlo Methods, Modelling of random phenomena, Statistics and Learning, Biomedical Imaging
 - Team projects such as : *Cross-diffusion in population dynamics* (coordination of Professor V. Bansaye, *Ecole Polytechnique's* CMAP), *Gaussian Processes and Kriging* (coordination of Professor T. Klein, *Université Paris-Saclay*)
- Université Paris-Nanterre, Nanterre, France** Sept 2022 — July 2024
Bachelor of Philosophy (*Licence EAD*)
 - Agreement between the *Université Paris-Nanterre* and *Ecole Polytechnique*
 - Themes : Philosophy of science, gender, religion, art, knowledge and the possible
- Collège Stanislas, Paris, France** Sept 2019 — July 2021
Bachelor of Science, (*Preparatory Classes : CPGE*), Mathematics, Physics and Chemistry GPA : 3.97
 - Intensive undergraduate preparation for entrance exams to France's top engineering schools
 - Ranked 10th at *Ecole Polytechnique* and 7th at *Ecole Normale Supérieure (ENS Ulm)*
- Institution Sainte Geneviève, Asnières-sur-Seine, France** Sept 2016 — July 2019
High School Diploma, *French Baccalaureate in Science* Highest Honours
 - French Tournament of Young Mathematicians (2019), ranked 4th

EXPERIENCE

- DTU, Department of Health Technology** Copenhagen, Denmark
Research Intern, Immunoinformatics and Machine Learning group Apr 2024 - Sept 2024
 - Member of the *Immunoinformatics and Machine Learning* Research Group, under the supervision of Professor M. Nielsen.
 - Developed and optimized machine learning algorithms aimed at predicting the antigen specificity of T-Cell Receptors
 - Enhanced the NetTCR model, transitioning from NetTCR2.2 to NetTCR3.0 by implementing a new architectural design, resulting in a 5% improvement in AUC (Area Under the Curve) performance (paper in progress)
- AQEMIA** Paris, France
Data Scientist Intern, Target Ranking team Jun 2023 - Sept 2023
 - Advance the therapeutic target identification process exploiting “omics” data (proteomic, genomic and transcriptomic) and improve the target evaluation models for the pipeline
 - Implement Statistical Models and Multiple Testing (Benjamini & Hochberg methods) to analyse Differential Expression across a range of diseases thanks to RNA sequencing datasets
- X-Forum** Palaiseau, France
Vice President May 2022 - May 2024
 - Organising *Ecole Polytechnique's* career fair, one of the largest in France
 - Gathering 200 companies, 1500 students, managing about 600,000 €
 - Leading a team of 60 students, split in different departments
- French SWAT, Gendarmerie Nationale** Nice, France
Cadet Officer Oct 2021 - Apr 2022
 - Military and human training as part of *Ecole Polytechnique's* program
 - French military police forces in a crime and drugs hotspot
 - Led an intervention unit of 25 soldiers during inquiries and raids

SKILLS

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| Language : | <ul style="list-style-type: none">• French - native (<i>Voltaire certification</i>)• English - proficient (<i>TOEFL : 101</i>)• Spanish - intermediate• Arabic - beginner | Programming : | Python, Java, C++, VBA |
| | | Databases : | SQL, Snowflake |
| | | Frontend : | HTML, CSS |
| | | Tools : | Git, LaTeX, PyMOL |

ACTIVITIES, AND INTEREST

- Tennis :**
- Played regional level, top 3% in France (4/6), Team's captain during 8 years
 - Ball-boy at French Open (Roland Garros) Grand Slam in 2015
- Football :**
- School's first team member at the University Championship
- Piano :**
- Played 9 years of classical, jazz, and pop music