

# ADRIEN LAGESSE

PhD Student in Machine Learning

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## EXPERIENCE

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### INRIA Paris | Now (8 months)

- **PhD Student** under the supervision of Marc Lelarge in the ARGO team.
- Working on **Geometric Deep Learning, GNNs, Combinatorial Optimization**.
- Invited to present my work at TU Delft for the **Graph Signal Processing Workshop**, at Paris Dauphine Université for the **doctoral conference: AI for The Sciences**.

### BNP Paribas | 2022 (6 months)

- **Research internship:** Research paper available on request.
- Won the **Highest honours of the jury price** (École Polytechnique).
- Research subject: ***Applying Computer Vision techniques to predict the stock market***
- Keywords: **Variational Auto-encoder, Residual Networks, Invariant and Equivariant NN, Transfer, and Multi-Task Learning**.
- **Significant improvements** on existing indicators (+20%). **Pushed to the production pipeline**.

### Research project | 2021 (4 months)

- Working with **CNRS researcher** François Yvon.
- Application of **Optimal Transport** to improve **word alignment** in a translation task.

### 73 STRINGS | 2021 (3 months)

- **Statistical Data Analysis team:** Research on **NLP subjects** such as **topic clustering** and **information extraction**.
- **Quantitative team:** Worked on improving the **CAPM model**. Tested some models with new data.

### France Atomic Energy Commission | 2020-2021

- Research subject: **Detection of weak signals**
- Creating **mathematical models** and **deep learning** models to detect anomalies in large datasets.
- Using **Graph Neural Network** to learn relationships in a multi-object physical system.

## STUDIES

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### Imperial College London | 2022-2023

- Master in **Pure Mathematics**.
- Master Thesis: Studied **Diffusion Dynamics** on graphs and related them to the **over-smoothing phenomenon with GNNs**.
- Courses: **Geometry** (Manifolds, Commutative and Lie Algebra, ...), **Game Theory**, **Dynamical Systems**, **Stochastic Processes**.

### Ecole Polytechnique | 2019-2022

- Pursuing the Cycle Ingénieur Polytechnicien (**bachelor + master's degree**) in France's **most prominent university** for science (Applied Mathematics, Statistical/Machine Learning, Computer Science)
- **Research-oriented studies**, participating in different **student groups working on Geometric Deep Learning, Optimal Transport, Probability, and Statistics**.

### French Air Force Academy | 2019 (3 months)

- **Officer Training** at the French Air Force Academy whose mission is to train and inspire **future military leaders**. Renowned as an **elite school in leadership**.

### Lycée Louis-Le-Grand | 2017-2019

- **Intensive** undergraduate studies in **Mathematics** and **Physics** that end with a highly selective competitive examination for entering a Grande Ecole.
- **Passed both years with very high honours** (4.0/4.0 GPA).

### Lycée des Mascareignes – Mauritius | 2014-2017

- Selected in the Indian Ocean for the **Math National Olympiad and Concours Général de Mathématiques**.
- Graduated from high school with **very high honours (scored 92%)**.

## SKILLS

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*Languages:* French (Native), **English** (Fluent)

*Tech:* Python, Pytorch, Tensorboard, C++, Rust, Google Cloud, Pandas, Polars

## HOBBIES

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- Member of the rugby team of Ecole Polytechnique.
- Programming **systematic trading strategies** on Google Cloud for **cryptocurrencies (Mid-frequencies strategies)**.