

# Romain ILBERT

PhD Student Graduated from ENSAE and Ecole Polytechnique

## WORK EXPERIENCE

### PhD in Representation Learning For Time Series

From 12/2021 to 05/2025

PARIS DESCARTES UNIVERSITY & HUAWEI - PARIS AREA

Short time contract followed by a PhD under the supervision of Ievgen Redko and Themis Palpanas

- Primary author and developer of SAMformer, a lightweight state-of-the-art forecasting model that surpasses previous benchmarks (Accepted as an Oral at ICML 2024)
- Data Generation for Time Series Classification (ICDE's workshop)
- Adversarial Machine Learning for Time Series Forecasting (ACM CCS's workshop)
- Analyzing Multi-Task Regression via Random Matrix Theory (Under review)
- SAMformer Extended: Joint Scheduling of Learning Rate and Loss Landscape Sharpness

### Machine Learning Engineer Intern

From 05/2021 to 11/2021

SNCF - LA DEFENSE

Data Science internship in Time Series Forecasting

- Crafted a model to predict train ticket sales across thousands of stations in France, achieving a national average MAPE of 10%, 92 days before train departures. Contributed to its national deployment.
- Used Microsoft Azure virtual machines and Jenkins for efficient model deployment
- Performed extensive SQL queries on large-scale datasets

### Machine Learning Research Intern

From 06/2020 to 10/2020

CNRS - PALAISEAU

Research Internship in Computational Finance and Energy Markets

- Developed a quantitative strategy for maximizing wind energy producers' profits in intraday electricity markets
- Utilized TensorFlow and Stochastic Calculus to solve complex partial differential equations modeling optimal trading strategies
- Explored the Universal Approximation Theorem to apply neural network solutions

### Quantitative Research Intern

From 06/2019 to 08/2019

ROTHSCHILD & CO - MONACO

Internship in Quantitative Finance and Portfolio Management

- Developed a quantitative model that achieved a 3.13-fold net performance increase over the Euro Stoxx 50 when backtested across the past 20 years
- Use of financial software (Facstet, Bloomberg) for data manipulation

## EDUCATION

### 2018-2021 ENSAE Paris and Ecole Polytechnique – Palaiseau France

#### • Master in Data Science at Ecole Polytechnique

Deep Learning, Statistical Learning, Computer Vision, Auction and matching, Recommendation systems, Reinforcement learning, NLP, Hackathon with Carrefour, Data Camp Astrophysics Project

#### • Master in Data Science and Statistical Learning at ENSAE

Advanced Optimization, Optimal Transport, Compressed Sensing, Online Learning, GPU Programming (in C), Statistics (in R)

**Applied statistics project with Banque de France** : Co-clustering and PCR algorithm with missing data for the identification of underlying states of an economic and financial system

### 2016-2018 Lycée Masséna - Nice France

#### • Classe préparatoire aux grandes écoles ECS1 - ECS2

Mathematics, Economics, Computer science, Geopolitics, English, Spanish, Philosophy, History & Geography, General Culture (HEC Maths 20/20, Essec Maths 20/20, Edhec Maths 20/20)

### 2014-2016 Lycée Masséna - Nice France

#### • Classe préparatoire aux grandes écoles MPSI - MP

Mathematics, Physics, Computer science, Philosophy, English, Spanish option

## OTHER EXPERIENCES

- Reviewed papers for ICML 2024
- Treasurer at KryptoSphère ENSAE (Crypto currency Association)
  - Coding in Solidity
- Member of the ENSAE theater association
- Mathematics Tutor (3 students in CPGE)



28 years old – french student



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NANTERRE - FRANCE

## SKILLS

### • Mathematics

Statistical Learning, Statistics, Optimization, Linear Algebra, Probabilities, Topology

### • Python

PyTorch, Tensorflow, Cuda, Numpy, Pandas, Scikit-Learn, Scipy, Keras, GPU Cluster Utilization, Matplotlib, Seaborn, Hugging Face Transformers

### • Finance

Stochastic calculus, Arbitrage, Binomial and Black-Scholes models, Pricing, Replications of derivatives, Options, Portfolio Management, Trading, Quantitative Models

### • Microsoft Office, Overleaf, Git, Coding in Solidity

## LANGUAGES

- **French** Native Speaker
- **English** C1
- **Spanish** B2

## INTEREST

- **Sports**
  - Soccer
  - Volley
  - Table Tennis
  - Gym
- **Travels**
- **Music**
  - Drums
  - Piano
  - Rock
- **Theater, Chess, Poems author**