Romain ILBERT

PhD Candidate Graduated from ENSAE and Ecole Polytechnique

28 years old – french student

+33 6 14 43 11 42

romain.ilbert@hotmail.fr

romain-ilbert

https://romain.ilbert.com

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
  - Rock
- **Theater, Chess, Poems author**

WORK EXPERIENCE

PhD in Representation Learning For Time Series

From 12/2021 to 04/2025 — **PARIS DESCARTES UNIVERSITY & HUAWEI - PARIS AREA**

Fixed-Term Contract and PhD supervised by Ievgen Redko and Themis Palpanas

- **Lead and developer of SAMformer**: a lightweight state-of-the-art sharpness-aware transformer-based forecasting model, including studies on rank, entropy, and sharpness in attention mechanisms, *Oral at ICML 2024*
- **Analyzing Multi-Task Regression via Random Matrix Theory**, *Spotlight at NeurIPS 2024*
- **Enhancing Multivariate Time Series Forecasting via Multi-Task Learning and Random Matrix Theory**, *NeurIPS Workshop: Time Series in the Age of Large Models*
- **Data Augmentation for Multivariate Time Series Classification**, *ICDE workshop* (A*)
- **Adversarial Machine Learning for Time Series Forecasting**, *ACM CCS workshop* (A*)
- **Foundation Models for Multivariate Time Series Classification** (Under review)

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 France — **ENSAE Paris and Ecole Polytechnique – Palaiseau**

- **Master in Data Science at Ecole Polytechnique**
Deep Learning, Reinforcement learning, Statistical Learning, Computer Vision, Auction and matching, Recommendation systems, 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 Programmation (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 France — **Lycée Masséna - Nice**

- **Classe préparatoire aux grandes écoles ECS1 - ECS2**
Mathematics, Computer Science, Economics, Geopolitics, English, Spanish, Philosophy, History & Geography, General Culture (HEC Maths 20/20, Essec Maths 20/20, Edhec Maths 20/20)

2014-2016 France — **Lycée Masséna - Nice**

- **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)**