Curriculum Vitae of Guillaume Remy

Email address: remyguillaume9275@gmail.com *Born on November 17th, 1992 in Paris.*
Academic web page: https://guillaumeremy92.github.io *Dual citizenship: French and American.*
Github: https://github.com/GuillaumeRemy92

Employment

Quantitative researcher at Cubist Systematic Strategies (Point72). 01/2024 – Present
- Built trading strategies for equities using time-series analysis, high-dimensional statistics, and machine learning, successfully contributing to the portfolio valuation.
- Implemented ML algorithms (trees, boosting, neural networks), and used LLMs for sentiment analysis.
- Worked on optimization for portfolio construction, including risk modeling and trading cost estimations.

Member in mathematics at the Institute for Advanced Study (Princeton). 09/2022 – 08/2023

Postdoctoral research scientist in the mathematics department at Columbia University. 09/2018 – 08/2022

Education

PhD in mathematics at École Normale Supérieure in Paris (top 1 French university in math). 09/2015 – 08/2018

École Normale Supérieure in Paris: Last two years of undergrad + graduate program. 09/2011 – 08/2015
Admitted 20th (nationwide exam) through the Math – Physics entrance exam.

Lycée Louis-Le-Grand in Paris: First two years of undergrad. 09/2009 – 08/2011

Internships and additional applied experience

Worked for the crypto startup Axiom (https://www.axiom.xyz). 08/2023 – 10/2023
- Involved implementing linear algebra for data analysis in zero-knowledge proofs.

Worked in biological data analysis at Harvard University, published in *Physical Biology*. 02/2013 – 07/2013

Math research and teaching

Conducted research in probability / mathematical physics on random surfaces and conformal field theory.
- 11 publications, all available at https://guillaumeremy92.github.io.
- Two papers published in the Duke Math Journal (top 5 math journal) and one in JEMS (top 8 journal).
- One paper in Annals of Proba. (top probability journal), two in CMP (top mathematical physics journal).
- Instructor of calculus and probability/statistics at both Columbia and École Normale Supérieure.
- Has given over 40 talks at research seminars.

Programming skills and experience

- Coding: Python (2 years at Cubist), Rust (3 months at Axiom), SQL, Matlab, Mathematica.
- Python libraries: Numpy, Scipy, Pandas, Polars, xArray, Scikit-Learn, PyTorch, Jax, Transformers, Ray.

AI projects and interests

- Implemented a transformer architecture for multi-dimensional time-series forecasting in a noisy setting.
- Performed a basic training run of GPT2 124M, exploring architecture design and scaling laws.
- Fine-tuned Qwen 2.5 Math 1.5B to solve math problems using supervised fine-tuning, reasoning RL.
- Experimented with latent space modeling for audio generation using VQ-VAEs and GANs.