Etienne Gauthier

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EDUCATION

Inria & ENS ULM, PhD Program   2024 – 2027
- Under the supervision of Francis Bach and Michael I. Jordan
- Working on decision-making in multi-agent environments

Ecole Normale Supérieure Paris-Saclay, Master MVA (Mathematics, Vision, Learning)   2023 – 2024
- Relevant coursework includes *Reinforcement Learning, Computational Optimal Transport, Convex Optimization and Applications in Machine Learning, Object Recognition and Computer Vision, Kernel Methods for Machine Learning, Graphs in Machine Learning, Generative Models for Images*

Ecole Polytechnique, Cycle Ingénieur   2020 – 2024
- One of France's leading universities for science and engineering
- Specialization in *Applied Mathematics* with a strong emphasis in *Mathematics* and *Computer Science*
- Relevant coursework includes *Algebraic Topology, Galois Algebra, Algebraic Geometry, Statistics, Optimization and Control, Algorithms for Data Analysis, Topological Data Analysis, Computational Geometry*

Lycée Sainte Geneviève, Preparatory Program   2018 – 2020
- A post-secondary program in advanced math, physics and computer science leading to nationwide entrance examinations to the *Grandes Ecoles* for scientific studies
- Undergraduate coursework includes *Topology, Linear Algebra, Probability, Analysis, Programming: Python, SQL*

WORK EXPERIENCE

Kyoto University Institute for Advanced Study – Kyoto, Japan   Mar – Aug 2023
- Research internship supervised by Yasuaki Hiraoka
- Designed a new kernel for commutative ladders in multidimensional topological data analysis
- Conducted research in theory of representations of associative algebras

Fintica – Tel Aviv, Israël   Jun – Sep 2022
- Quantitative research intern in a start-up specialized in AI in finance
- Developed a Monte Carlo algorithm that revealed an optimal tradeoff point for selecting rolling windows, regarding the accuracy of the ML model when trained on z-scores, and the similarity between z-scores and returns
- Designed a ML-based investment strategy on the equity market that outperformed the original approach on common KPIs, by conducting and integrating insights of statistical analysis to identify areas of suboptimal performance

French Navy – *Charles de Gaulle* aircraft carrier   Nov 2020 – Apr 2021
- Part of Ecole Polytechnique's first year curriculum
- Officer cadet in a NH90 helicopter unit of the *Charles de Gaulle*
- Deployed in the Mediterranean Sea, the Red Sea, the Indian Ocean, and the Persian Gulf during the *Clemenceau 21* mission

RESEARCH PAPERS

E-values Expand the Scope of Conformal Prediction
- Joint work with F. Bach and M. Jordan
- Developed novel conformal prediction methods using e-values
- Submitted to JMLR

Statistical Collusion by Collectives on Learning Platforms   Feb 2025
- Joint work with F. Bach and M. Jordan
- Investigated approaches for collectives to measure and exert data-driven impact on learning systems
- Accepted at ICML 2025 (Spotlight: top 2.6%)

Interval Replacements of Persistence Modules   Mar 2024
- Joint work with A. Hideto and E. Liu
- Developed interval rank invariants to generalize interval decomposition for persistence modules over finite posets
- Submitted to Discrete & Computational Geometry

TEACHING EXPERIENCE

Université Paris 1 Panthéon-Sorbonne   Sep 2022 - Jan 2023
- Teaching Assistant: *Statistics: Probabilities* for 2nd year undergraduate students

OTHER

META, FAIR Paris   Aug 2022 - Mar 2023
- Annotation of mathematical statements in Lean language, used as a dataset for neural theorem proving

SKILLS

- Python (Pandas, Scikit-Learn, PyTorch)
- Languages: French (native), English (TOEFL: 109/120)