Lluís Salvat Niell

lsalvat.github.io
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EDUCATION

MMathPhys Mathematics and Physics, University of Manchester   **Exp. 2025**
Integrated Master's Degree, Joint Honours Program. Specializing in Probability and Statistics and Theoretical Quantum Mechanics. Interruption of Study in 2022/23 Year to Conduct Research at Harvard.

Spanish Baccalaureate, Fundació Collserola   **2020**
Grade: 9.72/10. Optional Modules: Mathematics, Physics, Chemistry and Biology. Research Project: "The Retail Price Variability of Consumer Goods in Barcelona" (Grade: 10/10).

RESEARCH INTERESTS

Reinforcement Learning
Causal Inference
Machine Learning
Optimization
Prediction and Forecasting

RESEARCH EXPERIENCE

Undergraduate Researcher, University of Oxford   **Jul 2023 − Present**
Worked on short-lived correlation detection in US equities via random matrix theory and spectral clustering. Analyzed a NYSE equities minutely price dataset of 500+ equities over 14+ years with missing and outlier values.
Advisors: Mihai Cucuringu and Yutong Lu, Department of Statistics.

Undergraduate Researcher, Harvard University   **Jan 2023 − Aug 2023**
Designed, implemented, tested and simulated a novel RL algorithm to be used in a real HCT clinical trial. Combined hierarchical RL and posterior sampling to achieve superior performance than existing baselines.
Advisors: Susan Murphy and Shuangning Li, Department of Statistics.

Undergraduate Researcher, University of Manchester   **Jun 2022 − Oct 2022**
Worked on a literature review of the generalized hyperbolic distribution, specifically its distributional properties, parameter estimation methods and applications to financial modelling.
Advisor: Robert Gaunt, Department of Mathematics.

PUBLICATIONS

Shuangning Li, **Lluís Salvat Niell**, Sung Won Choi, Inbal Nahum-Shani, Guy Shani, Susan A. Murphy. *Dyadic Reinforcement Learning.* arXiv Preprint arXiv:2308.07843, 2023.

Lluís Salvat Niell, Robert E. Gaunt. *The Generalized Hyperbolic Distribution: A Review.* In Preparation.

Lluís Salvat Niell, Kieran Dewalt, Yunhao Lou Yutong Lu, Mihai Cucuringu. *Short-Lived Correlation Detection in US Equities Market.* In Preparation.

AWARDS	**Matrícula d'Honor (Distinction/Valedictorian)**, Fundació Collserola	**2020**

Awarded to students in the 95th percentile of academic performance.

	Physics Entrance Scholarship, University of Manchester	**2020**

Awarded to students with results equivalent to A*A*A* at A-Level.

TEACHING EXPERIENCE	**Academic Tutor**, Self-Employed	**Sep 2018 − Present**

Helping students aged 10-18 with their schoolwork and examinations across a variety of subjects, including mathematics, physics, chemistry and biology. Received excellent feedback from all students.

SKILLS

Programming Languages: Python, C++, R.
Python Libraries: Numpy, Pandas, Matplotlib, Scikit-Learn, PyTorch, JAX.
Other: LaTeX, SQL.
Languages: English (C2, Grade A), French (A2), Spanish (Native), Catalan (Native).

INDUSTRY INTERNSHIPS	**Trading and Technology**, Mako Trading	**Jul 2023 − Aug 2023**

Gained practical experience in options pricing and market flow through simulated trading using the Volcube platform. Completed an assignment on volatility event estimation in real setting using probabilistic methods.

	Machine Learning Engineering, Marlex Human Capital	**Jan 2022 − Jul 2022**

Developed an NLP-based classification algorithm for CV scraping fine-tuning BERT models in PyTorch. Trained a Random Forest model to predict the required credit facility with a 97% accuracy with Bayesian optimization.

	Selective Insight Programs, Jane Street and Citadel	**Sep 2021 & Apr 2022**

London Preview and Discover Citadel Europe. Networked with and attended talks by professionals across trading, quantitative research and engineering. Learned about high frequency market making, statistical arbitrage strategies and functional programming.

VOLUNTEER EXPERIENCE	**Data Scientist**, Fundació Girona-Est	**Oct 2021 − Present**

Working on setting up a centralised database to coordinate the activities of the organization, managing students' data and setting up administrator accounts for management. Conducting data analysis to inform executive decision-making.

LEGAL STATUS

European Union: Citizen (Spain).
United Kingdom: Pre-Settled Status (Right to Work).