



OWEN CHAFFARD

PhD Student in Statistics, *RPTU Kaiserslautern*
Marie Skłodowska-Curie Actions (MSCA) DIGITAL Doctoral Network Fellow
Junior Researcher, *CardoAI*

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Research Interests

Hierarchical and grouped time series, probabilistic forecasting, statistical learning, financial time series, uncertainty quantification, and machine learning for structured data.

Education

PhD in Statistics, *RPTU Kaiserslautern* 2025–Present

Supervisors: Prof. Ralf Korn and Prof. Wolfgang Karl Härdle
Topic: “*Hierarchical and Grouped Time Series in Private Debt Markets*”

MSc in Physics - Concepts and Applications, *ENS de Lyon* 2021–2023

Thesis: “*Hierarchical Autoencoders for Large-Scale Study of Turbulent von Kármán Flow Simulation*”

BSc in Physics, *ENS de Lyon* 2019–2021

Classe Préparatoire PC*, *CPGE Lazaristes*
2017–2019

Research Experience

Junior Researcher, *CardoAI*, Milan 2025–Present

- ▶ Developed probabilistic end-to-end reconciled hierarchical forecasting models.
- ▶ Built and deployed a dashboard to support forecasting of loan origination volumes and default rates.
- ▶ Developed a loan probability-of-default classifier and investigated explainable AI metrics for tree-based models to improve interpretability.

Research Intern, *INSA LIRIS*, Lyon 2024

- ▶ Applied deep learning methods for time series classification to assess consciousness in coma patients.
- ▶ Developed multimodal models combining EEG signals and visual temporal data.
- ▶ Applied explainable AI techniques, including SHAP and Integrated Gradients, to interpret model predictions.

Research Intern, *National Institute of Informatics*, Tokyo 2023–2024

- ▶ Applied and improved state-of-the-art long-term forecasting models for Bitcoin time series prediction.
- ▶ Adapted LLM backbones for forecasting tasks augmented with textual information.

Research Intern, *LISN*, Saclay 2022

- ▶ Conducted a PCA- and machine learning-based study of large-scale spatial symmetry in turbulent flows.
- ▶ Trained hierarchical autoencoders for interpretable non-linear flow decomposition.
- ▶ Investigated quasi-singularity detection using unsupervised density-based clustering methods.
- ▶ Developed and deployed 3D visualizations of results using Three.js.

Research Intern, *IP2I*, Lyon 2021

- ▶ Applied physics-informed machine learning methods to neutron star equation-of-state inference.
- ▶ Gained practical experience with neural networks for scientific data analysis.
- ▶ Worked with large-scale and noisy observational datasets, including LIGO/Virgo and NICER data.

Technical Skills

Programming: Python, R, SQL, LaTeX

ML/AI: PyTorch, TensorFlow, Hugging Face, scikit-learn

Tools: Git, Docker

Publications and Working Papers

- ▣ **Chaffard, O.**, Mollá, P., Cavazza, M., & Prendinger, H. (2025). Enhancing large language models for Bitcoin time series forecasting, *Knowledge-Based Systems*. <https://doi.org/10.1016/j.knosys.2025.114449>
- ▣ Bousquet, R., **Chaffard, O.**, Creff, M., Lucor, D., & Nore, C. (2024). Large-scale analysis of three-dimensional turbulent von Kármán swirling flows, *Physics of Fluids*. <https://doi.org/10.1063/5.0227495>
- ▣ **Chaffard, O.**, Härdle, W. K., Korn, R., Di Brino, G., & Guerrini, T. (2026). Hierarchy-aware probabilistic forecasting: Methodology and application to private debt markets. *Revise and Resubmit at Journal of the Royal Statistical Society A*. SSRN: <https://ssrn.com/abstract=5570259>
- ▣ **Chaffard, O.**, Härdle W. K., Gaman S., Junile M. Stablecoin depeg risk: insights from on-chain liquidity.

Talks and Research Communication

- ▣ **Chaffard, O.** and Härdle, W.K. (2025). Hierarchical Loan Forecasting. *Q2 ecosystem*. <http://dx.doi.org/10.24818/IDA-CL/2025.55>
- ▣ **Chaffard, O.** and Härdle, W.K. (2025). Proper Scoring Rules. *Q2 ecosystem*. <http://dx.doi.org/10.24818/IDA-CL/2025.133>
- ▣ **Chaffard, O.** And Härdle, W.K. (2025). Hierarchy-aware probabilistic forecasting in financial markets. *Q2 ecosystem*. Available on [Quantinar](#).
- ▣ **Chaffard, O.** and Härdle, W.K. and Gaman S. and Junile M.(2026) Stablecoin depeg risk: insights from on-chain liquidity. *Q2 ecosystem*. Available on [Quantinar](#).
- ▣ **Chaffard, O.** (2025) Unveiling the structure of Hierarchical Time Series. Blog post, ochaff.github.io

Data and Software

- ▣ **Chaffard, O.** (2026) Stablecoin DeFi Hourly Dataset. *Zenodo*. DOI: <https://doi.org/10.5281/zenodo.18926992>

Fellowships and Awards

- ▣ Marie Skłodowska-Curie Actions (MSCA) DIGITAL Doctoral Network, *Grant ID: 101119635* DOI: <https://doi.org/10.3030/101119635>