HUGO INZIRILLO

Authorized to work in EU and Canada
hugo.inzirillo@dauphine.eu— hinzirillo.github.io

RESEARCH TOPICS

· Financial Time Series
· Financial Econometrics
· Machine Learning in Finance
· Quantitative Portfolio Management

ACADEMIC POSITION

EDHEC Business School Since October 2024
Academic Mentor & Lecturer in Machine Learning, Master's Degree

· Teaching the theory and applications of autoencoder neural networks
· Guiding students through practical implementations using Python and TensorFlow
· Exploring applications in dimensionality reduction and anomaly detection
· Covering various classification algorithms including logistic regression, decision trees, and support vector machines
· Introducing advanced neural network architectures for financial applications

Université Paris-Dauphine | Université Paris Sciences & Lettres Since January 2021
Lecturer in Computer Science, Bachelor's Degree and Master's Degree

· Fundamental Python programming concepts with a focus on financial applications
· Covering data manipulation with pandas, numerical computing and visualization
· Object-oriented programming principles and their implementation in Python
· RESTful API development using Flask and FastAPI (Covering authentication, data serialization, and database integration)
· Neural networks architectures specifically for financial applications
· Guiding students through the development of basic financial models and analysis tools

ESILV - Ecole Supérieure d'Ingénieurs Léonard de Vinci September 2021 - January 2022
Lecturer in Econometrics, MEng Degree

· Introduction to principle of time series analysis
· Introduction to linear models (ARMA)
· Time series forecasting using R

PUBLICATION

Work in progress

· Inzirillo, H., & Genet, R. (2024). STAN: Smooth Transition Autoregressive Networks For Time Series Forecasting
· Fermanian, J-D., & Inzirillo, H. (2024). A New View on Markov-Switching GARCH Models.

Preprint

· Genet, R., & Inzirillo, H. (2024). CaAdam: Improving *Adam* optimizer using connection aware methods.
· Genet, R., & Inzirillo, H. (2024). A Temporal Linear Network for Time Series Forecasting.
· Inzirillo, H. (2024). Clustering Digital Assets Using Path Signatures: Application to Portfolio Construction.
· Inzirillo, H., & Genet, R. (2024). A Gated Residual Kolmogorov-Arnold Networks for Mixtures of Experts.
· Inzirillo, H. (2024). Deep state space recurrent neural networks for time series forecasting.
· Inzirillo, H., & Genet, R. (2024). SigKAN: Signature-Weighted Kolmogorov-Arnold Networks for Time Series
· Genet, R., & Inzirillo, H. (2024). A Temporal Kolmogorov-Arnold Transformer for Time Series Forecasting.

- Genet, R., & Inzirillo, H. (2024). Tkan: Temporal kolmogorov-arnold networks.
- Inzirillo, H., & De Villelongue, L. (2023). An Attention Free Conditional Autoencoder For Anomaly Detection in Cryptocurrencies.
- Inzirillo, H., & De Quénetain, S. (2022). Managing Risk in DeFi Portfolios.
- Inzirillo, H., & De Villelongue, L. (2022). An attention free long short-term memory for time series forecasting.
- Schnoering, H., & Inzirillo, H. (2022). Constructing a nft price index and applications.

Python Package

- CaAdam Optimizer
- Temporal Linear Network (TLN)
- KA Mixure of Experts (KaMoE)
- iisignature-tensorflow-2
- SigKAN
- TKAT
- TKAN

TALKS

- Financial Risk Forum (2023).*"An Attention Free Long Short-Term Memory for Time Series Forecasting"*
- Bridging Rough Paths and Deep Learning: New Frontiers, Alan Turing Institute. *Unravelling Kolmogorov-Arnold Networks - Application to Time Series (2024)*

SCHOLARSHIPS

- PhD Scholarship. Funded by private company Napoleon Group with support of National Association for Research and Technology (ANRT)

EDUCATION

CREST | Institut Polytechnique de Paris *From October 2020 to June 2024*
Doctor of Philosophy - Machine Learning, Deep Learning for Time Series.
Contributions to econometric and deep learning methods for time series.
Hadamard Doctoral School of Mathematics (EDMH), Supervisor: Jean-David Fermanian
Focused on bridging the divide between traditional financial econometrics and deep learning techniques. Developed innovative methods for analyzing temporal data, applied to financial modeling, cryptocurrency forecasting, and DeFi risk management. Contributed to both theoretical machine learning advancements and practical implementations in quantitative finance. Some papers are available online: Google scholar.

Université Paris-Dauphine | Université Paris Sciences & Lettres *June 2020*
Master 272 - Financial Engineering
Non Linear Econometrics, Advanced Times Series Analysis, Machine Learning in Finance, Python, C#, C++, Matlab. Master Thesis: Performance vs Persistence : Assess the alpha to identify outperformers **EDHEC Business School** *June 2018*
Bachelor of Business Administration - **Management and Finance**
Project Management, Econometrics, VBa, Accounting, Financial Management.

EXPERIENCE

Vulturi, Paris November 2022
Managing Director, Project Director

- Helping startups to launch their business by providing technical and strategic support.
- Led cross-functional teams of developers (up to 4 developers), data scientists, and product owners to deliver cutting-edge solutions in different sector (finance, agriculture, human resources).

- Define project scope, objectives, and deliverables over different technical projets.
- Managed the entire project lifecycle, from conceptualization to deployment, ensuring alignment with strategic business objectives and regulatory requirements.
- Contributed to the launch of dozen of startups. 70% raise funds from 100K€ up to 1M€ to scale.

Simons, Paris February 2022-Janvier 2023
Managing Director, Quant Research

- Led multiple research programs focused on cryptocurrency modeling using advanced machine learning techniques, driving innovation in financial technology.
- Orchestrated the integration of machine learning algorithms into cryptocurrency analysis, enhancing predictive modeling and risk assessment capabilities.

Napoleon Crypto (Coinshares), Paris June 2020-February 2022
Software Engineering & Research

- Conducted extensive research in systematic trading strategies, utilizing advanced quantitative methods to optimize performance and risk management.
- Designed and implemented sophisticated Python and Java applications for algorithmic trading, enhancing execution efficiency and market analysis capabilities
- Implemented machine learning techniques to improve predictive modeling and pattern recognition in financial time series.

Société Générale Corporate & Investment Banking, Paris June 2019 - May 2020
QIS - Engineer

- Conducted in-depth research on algorithmic trading strategies focusing on equity volatility
- Collaborated with quantitative analysts to refine and validate strategy performance.
- Created robust Python libraries for data analysis, visualization, and statistical modeling.
- Designed and implemented a comprehensive backtesting framework to evaluate strategy performance.

TECHNICAL STRENGTHS

Computer Languages	Python, Machine Learning Framework (PyTorch, Keras) , Java (SpringBoot).
Software & Tools	Microsoft Office, Stripe, Slack, Jira, Asana
Languages	French native, English fluent, Spanish, Italian