

Resume

Federico Gatta

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Professional Summary

PhD student in Applied Mathematics with a proven track record of impactful publications and advanced algorithmic problem-solving capabilities demonstrated through academic and coding awards. My research sits at the intersection of risk measures, decentralized finance, market microstructure, and machine learning. Passionate about applying innovative AI-driven solutions to real-world problems, with a demonstrated ability to collaborate with different networks of colleagues.

Education

PhD in Computational Methods and Mathematical Models for Sciences and Finance

Scuola Normale Superiore, Pisa, Italy — Nov 2022 – Present

- ▷ *Thesis*: From TradFi to DeFi: Tail Risks, Market Microstructure, and On-chain Dynamics.
- ▷ *Supervisors*: Prof. Piero Mazzarisi, Prof. Fabrizio Lillo

International Visiting Graduate Student

University of Toronto, Toronto, Canada — February 2026 – June 2026

- ▷ *Research focus*: Decentralized Exchanges and Proof of Stake economic analysis
- ▷ *Inviting Professor*: Prof. Dr. Sebastian Jaimungal

Master's Degree in Mathematics (with honours)

University of Naples Federico II, Italy — Feb 2021

- ▷ *Thesis*: Machine Learning Approaches in Financial Data Analysis.
- ▷ *Supervisors*: Prof. Salvatore Cuomo, Prof. Francesco Piccialli
- ▷ *Topic*: Developed a novel technique for stocks clustering and a pure-alpha strategy.

Work Experience

Research Fellow

Mathematical mOdelling and Data AnaLysis (MODAL) laboratory, University of Naples Federico II — Apr 2021 – Oct 2022

- ▷ Conducted research on machine learning and deep learning applications in Industry 4.0.
- ▷ Published multiple papers on AI-driven solutions for financial and industrial problems.

Awards & Achievements

- ▷ **Honorable Mention Award - FinteQC**, 2026. My paper "Deviations from Tradition: Stylized Facts in the Era of DeFi" has been awarded an Honorable Mention in the Student Category by the Scientific Committee of the Canadian Conference on Fintech (FinteQC 2026).
- ▷ **Winner of the SIAG/FME Code Quest**, 2024. The competition combined two FinTech themes: Decentralized Finance and Automated Asset Management. Over 120 teams from around the world signed up for the competition.
- ▷ **Buon Compleanno Federico II Award** for academic excellence, 2020.

Selected Publications

- ▷ **Deviations from Tradition: Stylized Facts in the Era of DeFi** *Quantitative Finance*, (In press). [GitHub link](#).
- ▷ **A high-frequency approach to Realized Risk Measures** *Arxiv*, 2025. [GitHub link](#).
- ▷ **ENCODE-Ensemble neural combination for optimal dimensionality encoding in time-series forecasting** *Information Fusion*, 2023. [Paper link](#).

Events Organization

- ▷ **Decentralized Finance & Crypto Workshop** - *Organizing Committee (26-28 January 2026)*, The workshop has been dedicated to Decentralized Finance and Crypto, bringing together leading voices from academia and industry to foster collaboration and spark innovation. [Website link](#).
- ▷ **PRactical Applications of eXplainable Artificial Intelligence methods (PRAXAI)** - *Program Committee (14 October 2022 II edition; October 2023 III edition)* PRAXAI focuses on bringing the research on Explainable Artificial Intelligence (XAI) to actual applications and tools that help to better integrate them as a must-have step in every AI pipeline. [Website link](#).

Key Skills

- ▷ **Programming:** Python (Numpy, Pandas, Scipy, TensorFlow, Pytorch, Jupyter, Selenium), MATLAB, Rust, Excel, $\LaTeX$. Basic knowledge of C and MQL4. You can find some of the projects that I have developed for my research activity on my [GitHub repo](#).
- ▷ **Machine Learning:** Deep learning, predictive analytics, risk management.
- ▷ **Tools:** Inkscape, GIMP, Mathematica.
- ▷ **Languages:** Italian (native), English (B2 First Certificate).