

Joseph Ruocco

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EDUCATION

Fordham University, Gabelli School of Business

New York, New York

Master of Science in Quantitative Finance

August 2025 - Present

- GPA: 3.5/4.0 | *Expected Graduation Dec 2026*
- Relevant Coursework: Advanced C++ for Finance, Interest Rate Derivatives, Fixed Income Securities, Market Microstructure & Trade Execution, Time Series Econometrics, Cloud Computing & Finance Uses

Hunter College, Computer Science Honors Program

New York, New York

Bachelor of Arts in Computer Science

August 2018 - December 2020

- GPA: 3.8/4.0 | *Graduated Dec 2020 magna cum laude*
- Relevant Coursework: Data Structures & Algorithms, Operating Systems, Advanced Calculus, Probability, Linear Algebra

TECHNICAL SKILLS

- **Languages/Tools:** Python, REST APIs, SQL, MSSQL, PostgreSQL, C++, Git, Linux, Docker, pandas, NumPy, scikit-learn, ETL Pipelines, Data Validation, Risk Analytics, R

WORK EXPERIENCE

Société Générale

New York, New York

Rapid Application Developer - Front Office Risk Analytics & Trading Systems

May 2022 - August 2025

- Developed and maintained reusable Python libraries integrating internal market risk, trading, and P&L data services, enabling consistent data access across front-office analytics applications.
- Diagnosed and resolved production analytics issues during live trading hours, coordinating with traders, risk managers, and technology teams to restore critical functionality.
- Engineered Python and MSSQL applications to historicize high-volume daily P&L data across equity derivatives portfolios, reducing data-delivery latency and improving front-office analytics workflows.
- Led development of a Python web application supporting RENTD monitoring across AMER trading activities with real-time threshold alerting.
- Automated market-effects and risk analytics pipelines, accelerating data availability from ~2:30 p.m. manual delivery to ~9:00 a.m. and enabling earlier desk and risk visibility.
- Built curve-construction and stripping tools for SOFR/OIS markets, supporting interest-rate swap risk analysis, scenario testing, and regulatory stress exercises.
- Partnered with traders, quants, risk managers, and technology teams to deliver analytics solutions from requirements gathering through testing, deployment, and production support.

SELECT QUANTITATIVE DEVELOPMENT PROJECTS

Market Microstructure & Execution Analytics — Python, pandas, LOBSTER Data

- Analyzed limit order book and message data for GOOG/MSFT to study bid-ask spreads, depth profiles, intraday volume patterns, and execution costs.
- Built time-series analytics using pandas resampling to evaluate spread behavior, liquidity, and market activity throughout the trading day.
- Simulated TWAP execution strategies and compared execution performance, price impact, and timing effects across trading windows.

Repo Pre-Trade Analytics Platform — C#, ASP.NET Core, EF Core, PostgreSQL, Docker

- Built a production-style analytics API replacing spreadsheet-based repo pricing workflows with reusable pricing services.
- Implemented fixed-income pricing, accrued interest calculations, financing analytics, and risk-sensitive valuation workflows.
- Designed EF Core/PostgreSQL data models, persistence, and audit logging to support traceability of pricing inputs, assumptions, and outputs.

Interest Rate Curve Construction & Fixed-Income Analytics — Python, C++

- Bootstrapped spot and forward curves from Treasury/OIS market data using reusable curve-construction and pricing logic.
- Implemented bond pricing, discount-factor interpolation, PV01, duration, par swap valuation, and curve sensitivity analysis.