Fred Viole

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LinkedIn | GitHub: OVVO-Financial | OVVO Labs | SSRN

Current Position

OVVO Financial Systems / OVVO Labs (March 2007 – Present)

Founder & Head of Research

- Developed and commercialized a suite of production quantitative finance applications built on partial moments and Nonlinear Nonparametric Statistics (NNS): MacroNow (nonparametric vector autoregression nowcasting of GDP, CPI, unemployment across 30 Fed variables), Options (model-free empirical pricing via upper/lower partial moments with confidence intervals and Greeks; put–call IV ratio as a conditional tail-geometry state variable), Portfolio (utility-aware directional partial-moment covariance embedding investor preferences before optimization; scales to ~2,000 securities in seconds), Ranking (expected partial-moment ranks on user-uploaded universes), and Options Trading Dashboard (daily defined-risk debit-spread tickets synthesized from ranking scores and IV-ratio research).
- Full Suite Bundle combines MacroNow, Options, Portfolio, Ranking, and the Options Trading Dashboard under one coherent partial-moment framework.
- Developed and live-traded medium-frequency SPY dispersion strategy (OVVO Alpha). Reported results include ~34.5% annualized return vs. ~18.2% SPY, 7.5% max drawdown vs. 18.8%, Sharpe (Rf 4%) 1.87 vs. 0.85, and cumulative growth of ~105% vs. ~50%.
- Authored and maintains the open-source NNS R package (CRAN, current major version 13.x) and the official Python port (ovvo-nns). Framework originated from years-long correspondence with Harry Markowitz, who described the partial-moment approach as more general than mean-variance.
- Collaborated extensively with Dr. David Nawrocki (Villanova) and Dr. Hrishikesh Vinod (Bell Labs / Fordham). Editorial board member, Journal of Behavioral and Experimental Finance.
- Published the Second Edition (2026) of Nonlinear Nonparametric Statistics: Using Partial Moments, freely available online, expanding the 2013 foundational text.
- Provides research and consulting in asset management, risk management, and mathematical finance. Speaker at QuantVision 2025 (Fordham) and featured in industry interviews on partial moments and applied NNS.

Professional Experience

Terra Global Asset Management (March 2018 – September 2019)

Portfolio Manager / Quantitative Research

- Managed a $35M mid-frequency portfolio of commodities, equities, fixed income, FX, and derivatives with a 2+ Sharpe ratio.
- Developed market-making strategies for a NYSE firm within the portfolio.
- Built infrastructure for low-latency data feeds and storage.

Carlin Securities (April 2002 – March 2007)

Trader, Red Bank, NJ

- Traded equities, commodities, FX, and derivatives in a $5M book.
- Developed algorithmic models for commodities and currencies.

Momentum Securities (August 1999 – April 2002)

Principal / Trader, Staten Island, NY

- Managed a day trading firm and achieved $1M+ trading profits from a $50k startup account.
- Ranked in the top 25 nationally among thousands of traders.
- Trained and recruited over 50 traders.
- Managed daily stock volumes accounting for 20% of the market.

Morgan Stanley (September 1998 – August 1999)

Assistant Trader, New York, NY

- Specialized in distressed debt trading and Asian bank debt analysis.

- Worked with multiple desks to compile market quotes for high-yield securities.

Education

Villanova University – Bachelor of Science, Economics (May 1997)

Minor: Art & Art History

PhD Candidate, Economics, Fordham University, ABD

- Focused on nonlinear statistics, numerical analysis, machine learning, portfolio optimization, risk management, behavioral and quantitative finance.

GRE – Perfect Score, Quantitative Section (December 2016)

Selected Publications

- *Nonlinear Nonparametric Statistics: Using Partial Moments* (Second Edition, 2026; first edition with David Nawrocki, 2013). Available at ovvo-financial.github.io/NNS/book/
- Estimation Error and Partial Moments, *International Review of Financial Analysis* (2024)
- Nonparametric Regression Using Clusters, *Computational Economics* (2018)
- LPM Density Functions for the Computation of the SD Efficient Set, *Journal of Mathematical Finance* (2016)
- Predicting Risk/Return Performance Using Upper Partial Moment/Lower Partial Moment Metrics, *Journal of Mathematical Finance* (2016)
- Behavioral Finance in Financial Market Theory, Utility Theory, Portfolio Theory, and the Necessary Statistics: A Review, *Journal of Behavioral and Experimental Finance* (2014)
- An Analysis of Heterogeneous Utility Benchmarks in a Zero Return Environment, *International Review of Financial Analysis* (2013)
- The Utility of Wealth in an Upper and Lower Partial Moment Fabric, *The Journal of Investing* (2011)
- Physics Envy: A Collection of White Papers Identifying Positive Economics, Optimization, Their Role in the Financial Crisis and Solutions (2011)

Additional working papers and notes available on SSRN (author page: papers.ssrn.com/author=1421356), including recent contributions on partial moments as a bridge between Bayesian and frequentist decision-making, variance decomposition, VaR and probability bounds, and distributional equivalence in GBM.

Open-Source Software

- *NNS: Nonlinear Nonparametric Statistics* – R package on CRAN (maintainer). Comprehensive suite for partial moments, nonlinear dependence, regression, forecasting, stochastic dominance, Monte Carlo, and related methods.
- *ovvo-nns* – Official Python port (PyPI). Parity-focused native implementation of the R package.

Certifications, Competitions & Recognition

- Series 3, 7, 63, 55, 24 licensed; NFA Registered ID: 0402440
- 3rd place, M6 Investment Competition
- Winningest microprediction participant using NNS on live time-series data
- CrowdCent Hyperliquid Ranking Challenge participant (ovvo-nns); demonstrated periods of strong relative ranking with negative correlation to the meta-model
- Years-long correspondence with Nobel Laureate Harry Markowitz affirming the generality of the partial-moment framework relative to mean-variance