Leonardo Romero, PhD

Quantitative Researcher & Senior Financial Analyst | Derivatives, Portfolio Optimization, Financial Modeling | Systematic Trading & AI/LLM Finance

leonardo@leoromero.dev • +52 33 2707 8849 • linkedin.com/in/leonardo-suarez-romero • github.com/leoromero-quant • leoromero.dev

Remote, US time zones • U.S. LLC with active EIN and U.S. business banking, or via EOR (Deel, Remote.com, Oyster) • USD pay

PROFESSIONAL SUMMARY

If we were to call Leonardo a superhero, **his superpower** would be to **X-ray advanced financial models** and explain them so clearly that a first-year student with no mathematical background can follow. He is a quantitative analyst and PhD economist who solves complex financial problems *and* then makes the answer obvious to the people who have to act on it. He began his career at **Thomson Reuters**, building the real-time market-data system for Latin America when there was nothing in place. Twenty years later he still works across the full lifecycle of a market model: he built the infrastructure that feeds it, traded against it, researched it, taught it to more than **1,000 students at a 9.5/10 evaluation average**, and now ships it as production software. Today he delivers **financial modeling, forecasting, scenario planning and variance analysis** alongside **derivatives pricing, portfolio optimization and risk measurement**, in **Python and SQL**, validated against live market data. Licensed **AMIB Figura 3**. When the model goes in front of executives, the room follows.

PROFESSIONAL EXPERIENCE

Independent Quantitative Consultant, Smart Delta Option Trust LLC / Self-Employed — 2014 – Present

- Designed **Smart-Beta**, a sector-relative factor strategy that **outperformed the NASDAQ-100 (QQQ) by 4.5%** with superior risk-adjusted returns (**Sharpe 0.83 vs 0.65**), fully documented in tested, public Python code.
- Architected and shipped **2 production quantitative SaaS platforms**: **Prob-Edge**, risk-neutral density extraction from live option chains (Breeden–Litzenberger), and **PaPs Mercados**, an on-demand valuation engine integrating more than **20 market-data adapters** into PostgreSQL, with FastAPI, Stripe billing and Docker deployment.
- Advised private clients on derivatives-based portfolio construction, managing **USD 5M+ aggregate AUM across 5 portfolios** with multi-year documented performance under client mandates.
- Served as a **Finance Expert training frontier AI systems**, building and stress-testing the quantitative-finance models these systems learn from, while running a consulting practice in capital-markets analytics and compliance.

Full-time Professor of Finance, Universidad Panamericana School of Business — Mar 2020 – Dec 2025

- Trained **1,000+ students** across **9 cohorts** and 4 academic levels (BSc Finance, BSc Financial Engineering, MSc Finance, PhD), translating stochastic calculus, derivatives pricing and risk models into plain language for audiences with no mathematical training; sustained a **9.5/10 evaluation average** and student-voted recognition as top finance faculty.
- Designed and delivered curricula in Financial Engineering, Financial Derivatives, Risk Management, Credit & Market Risk and Time-Series Econometrics across **3 campuses**, integrating Python and live market data; supervised graduate theses in options pricing, implied-volatility modeling and quantitative trading strategies.

Financial Data Analyst, Real-Time Markets, Thomson Reuters — Apr 2004 – Apr 2012

- Owned the real-time market-data infrastructure (today part of **LSEG**) across **4 LatAm markets** and **8 years without a market blackout**: **3,500+ instruments** (equities, TES sovereign bonds, FX intraday feeds) with full historical series and metadata, processing up to **100M daily price events** at **99.9%+ uptime** with sub-3-minute first response.
- Co-designed and launched the **first real-time ingestion** for the Colombian Stock Exchange (BVC) and the SEN sovereign-bond platform of Banco de la República, replacing an end-of-day model and integrating **8+ exchange and macroeconomic sources**.
- Seconded to **Thomson Reuters New York** for 11 months (2009) with the U.S. fixed-income analytics team, building LatAm sovereign and corporate bond coverage (yield curves, spreads, credit references) through the global financial crisis.

FX Trader, Asesores en Valores, Bogotá — May 2012 – Aug 2013

- Traded spot FX across **5 currency pairs** (COP, USD, EUR, CHF, GBP) with own capital, applying hedging and discretionary directional strategies; delivered risk-hedged allocation frameworks to high-net-worth clients under **AMIB Figura 3** certification.

TECHNICAL SKILLS

Financial Modeling & FP&A: Forecasting, budgeting, scenario planning, variance analysis, valuation, unit economics, executive and board reporting, dashboards, advanced Excel
Quantitative Finance & Risk: Derivatives pricing (Black-Scholes, Greeks), Heston & SABR stochastic volatility, risk-neutral densities (Breeden–Litzenberger), VaR, Expected Shortfall, Monte Carlo, stress testing, backtesting, portfolio optimization (Markowitz, Black–Litterman), factor models
Econometrics & Time Series: ARIMA, GARCH family, EWMA (RiskMetrics, $\lambda = 0.94$), cointegration (VAR/VECM), yield-curve analysis, spectral analysis, OLS and time-series regression
Programming & Data: Python (pandas, NumPy, SciPy, statsmodels, scikit-learn), SQL (PostgreSQL, SQL Server), FastAPI, SQLAlchemy, Docker, Git, Linux, Streamlit, Plotly, Power BI
AI / LLM for Finance: Anthropic Claude API, OpenAI API, Claude Agent-Skills, RAG pipelines, MCP connectors, LLM workflow orchestration
Market Data: Bloomberg, Reuters Eikon (3000 Xtra), Financial Modeling Prep, tastytrade, FinViz

SELECTED QUANTITATIVE PRODUCTS (PUBLIC CODE)

- **Prob-Edge — Risk-Neutral Density SaaS for Options Markets.** Recovers risk-neutral densities from live tastytrade option chains via Breeden–Litzenberger (put-call parity, PCHIP interpolation, numerical second derivative, forward-correction normalization); ships 68%/95% probability cones, FastAPI REST backend, JWT auth, async credit ledger, Stripe subscriptions. *github.com/leoromero-quant/prob-edge*
- **PaPs Mercados — AI-Powered Equity Analytics Platform.** 20+ Financial Modeling Prep adapters under a layered service/adapter architecture with per-endpoint cache TTLs and 429-aware retries; 30-day GBM probability fan from EWMA ($\lambda = 0.94$) and rolling-60d σ; Anthropic Claude streaming for narrative synthesis; Stripe-billed FastAPI backend on PostgreSQL. *github.com/leoromero-quant/paps-mercados-app*
- **Smart-Beta — Sector-Relative Alpha & Factor Framework.** Sharpe single-index model generalized across iShares sector ETF benchmarks: rolling alpha, beta, residual-risk and R^2 decomposition with an above-sector-mean candidate filter. **Outperformed QQQ by 4.5%, Sharpe 0.83 vs 0.65.** Companion to the doctoral dissertation. *github.com/leoromero-quant/smart-beta*

EDUCATION & CREDENTIALS

PhD in Economics | Universidad de Guadalajara, Mexico (2016–2019). Dissertation: *The Inverted Yield Curve and Its Effects on Capital Markets* (VAR cointegration, spectral analysis, sector risk premia). **Doctoral research stays at FAU Erlangen-Nürnberg, Germany**; dissertation co-evaluated by Prof. Jürgen Kaehler (PhD, London School of Economics).
MSc in International Economic Relations | Universidad de Guadalajara, Mexico (2014–2016). Specialization: Financial Econometrics. **Half the programme completed at FAU Erlangen-Nürnberg, Germany**, living and studying in a fully **English-taught** graduate cohort.
BSc in Finance & International Relations | Universidad Externado de Colombia (1998–2003).
Specialization in Portfolio Management | CESA, Bogotá (2004–2005), financed by Thomson Reuters as professional development.
Credentials: AMIB Figura 3, Strategic Investment Advisor • RiskMathics, Derivatives • Insurance Broker, Nivel B (Mexico).
Languages: Spanish (native) • English (professional; taught graduate finance in English) • German (B2).

Interests: Golf — **USGA GHIN Handicap Index 5.5**.