Leonardo Suárez Romero, PhD

Quantitative Data Analyst | Financial Markets, Risk Modeling & AI-Agent Applications

Mexico City, Mexico • +52 33 2707 8849 • leonardosuarezromero@gmail.com

leoromero.dev • linkedin.com/in/leonardo-suarez-romero • github.com/leoromero-quant

Open to remote USA roles • U.S. LLC with active EIN and U.S. business banking, or available via EOR (Deel, Remote.com, Oyster) • USD pay • flexible US time zones

PROFESSIONAL SUMMARY

Quantitative Data Analyst and PhD economist with 15+ years across real-time financial data infrastructure, capital-markets analytics, applied financial econometrics, and AI-powered investment workflows. Seven years at **Thomson Reuters** owning real-time market-data infrastructure for Latin America (Mexico, Colombia, Chile, Peru), administering **3,500+ instruments** across equities, fixed income, FX, and macro indicators and processing **10M–100M daily tick events** under a **99.9%+ uptime SLA** for institutional trading platforms.

Builder of production analytics: ETL pipelines on PostgreSQL and SQL Server, time-series and volatility models (**ARIMA, GARCH, EWMA / RiskMetrics** λ=0.94), VaR and Monte Carlo risk frameworks, options analytics (**Black-Scholes, risk-neutral densities via Breeden–Litzenberger**), and **AI-Agent applications** that orchestrate large language models (Anthropic Claude, OpenAI) over live market-data APIs for portfolio review, valuation, and risk reporting.

Doctoral research in applied financial econometrics on the inverted yield curve, cointegration, and sector-level risk premia. From 2020 through 2025, full-time Professor of Finance at **Universidad Panamericana School of Business** (Guadalajara, Santa Fe CDMX, Aguascalientes), teaching derivatives, time-series econometrics, and risk management across the BSc, MSc, and PhD programs — **1,000+ students trained**, **9.5/10 evaluation average**. Stepped away from the appointment in late 2025 to dedicate full-time to independent quantitative consulting and AI-agent applications for financial markets.

CORE COMPETENCIES

Programming & Data: Python, SQL, Pandas, NumPy, Scikit-learn, FastAPI, SQLAlchemy, PostgreSQL, MongoDB, Docker, Git, Linux, AWS, Snowflake

Quantitative Finance & Risk: VaR, Monte Carlo, CAPM, Black-Scholes, Risk-Neutral Densities (Breeden–Litzenberger), Greeks Management, Derivatives & Options Strategies, Hedging, Stress Testing, Backtesting

Econometrics & Time Series: Financial Econometrics, ARIMA, GARCH, EWMA (RiskMetrics, λ=0.94), Cointegration (VAR/VECM), Yield-Curve Analysis, Spectral Analysis, Volatility Modeling

AI & LLM Engineering: Anthropic Claude API, Claude Agent-Skills, OpenAI API, RAG Pipelines, MCP Connectors, Prompt Engineering, Whisper, LLM Workflow Orchestration

Financial Data & Visualization: Bloomberg, Reuters Eikon (3000 Xtra), Financial Modeling Prep API, tastytrade API, FinViz, Streamlit, Plotly, Power BI, Matplotlib

Taught & Researched: Heston / SABR Stochastic Volatility, Exotic Options (Barriers, Asians), Fama–French / Barra Factor Models, Markowitz & Black–Litterman Portfolio Optimization, Statistical Arbitrage / Pairs Trading, Reinforcement Learning for Trading, LSTM & Transformer Forecasting, NLP Sentiment for Financial Text

PROFESSIONAL EXPERIENCE

Independent Quantitative Consultant, *Self-Employed* — 2014 – Present

- Independent quantitative consulting practice focused on financial markets, risk modeling, and AI-powered investment workflows. Active since 2014 in parallel with academic work; **transitioned to full-time dedication in January 2026** after concluding a five-year, ten-month full-time professorship at Universidad Panamericana School of Business.
- Build production **AI-Agent applications** for quantitative finance: Claude Agent-Skills toolkits that orchestrate live market-data APIs, RAG pipelines over financial corpora, and multi-step reasoning workflows for portfolio review, valuation, peer analysis, and risk reporting.
- Engineer Python financial-analytics pipelines using a layered service/adapter architecture (UI → services → adapters → domain) over the Financial Modeling Prep, tastytrade, and FinViz APIs; per-endpoint cache TTLs and 429-aware retries to automate stock screening, peer analysis, and risk-return diagnostics.
- Deliver AI-assisted investment research integrating Anthropic Claude and OpenAI APIs to generate structured financial narratives, peer comparisons, and market-risk summaries from standardized datasets.
- Operate a multi-asset daily market-briefing workflow covering **16 instruments** across equities, indices, commodities, FX proxies, and crypto, with VIX-based volatility-regime alerts.
- Advise private clients on derivatives-based portfolio construction and risk-adjusted allocation; manage **USD 5M+ aggregate AUM across 5 portfolios**, specializing in equity and index options strategies with multi-year documented performance under client mandates.

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

- Full-time faculty appointment at the School of Business with primary campus in **Guadalajara (Zapopan)** and concurrent teaching engagements at the **Santa Fe (CDMX)** and **Aguascalientes** campuses. Taught across **four academic levels**: BSc in Finance & Administration, BSc in Financial Engineering, MSc in Finance, and PhD in Business Sciences.
- Designed and delivered curricula in Financial Engineering, Time-Series Analysis, Risk Management, Credit & Market Risk, and Financial Derivatives (introductory and advanced), integrating **Python**, GRETL, and live market data into applied quantitative-finance projects.
- Cumulative **1,000+ students trained** across nine cohorts; supervised graduate theses and capstone projects in Python-based risk management, options pricing, implied-volatility modeling, and quantitative trading strategies.
- Sustained **9.5/10 average teaching evaluation** across all academic levels; multi-cohort student-voted recognition as a top finance faculty member.

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

- Owned real-time market-data infrastructure for Latin America (Mexico, Colombia, Chile, Peru), reporting to a global manager in New York and a regional lead in São Paulo; sole long-running owner of the regional production feed.
- Administered ∼**3,500+ instruments** across the four countries, covering the full universe of the Colombian Stock Exchange (BVC), ∼350 actively traded equities, the historical and intraday yield curve of **Banco de la República TES sovereign bonds (**∼**200 instruments)**, and FX intraday feeds at **150–200 ticks/minute** on USD-COP, USD-MXN, USD-PEN cross-rates.
- Co-designed and operated the **first real-time data ingestion** for the BVC equities exchange and the SEN sovereign-bond trading platform of Banco de la República, replacing a daily end-of-day update model; collaborated directly with exchange engineers, product owners, and 24×7 data operations on schema design, ingestion logic, and incident response.

- Built **Python** validation, anomaly-detection, and reconciliation scripts and **SQL Server** queries on Linux/Bash for **10M–100M daily tick events**; sustained **99.9%+ uptime**, with average incident-resolution time under 15 minutes and first-response under 3 minutes.
- Integrated **8+ exchange and macroeconomic data sources**: BVC equities, SEN (Banrep), SET-FX (FX exchange), BVC fixed-income system, Banco de la República and Banxico macro feeds, OTC interbank FX forwards, OTC interbank rates for MX/CO/PE, and the Bolsa de Valores de Lima.
- Led the **migration** of the legacy Excel InsertLink/contributor pipeline to a Python-driven SQL Server real-time data layer; delivered full schema, lineage, and handover documentation.
- Engineered a **Power BI fallback redundancy layer** (Excel macro + 10-minute delayed ingestion) that kept the platform live during exchange-API outages, cutting recovery time from hours to minutes.
- Mentored and trained **3+ junior analysts** in data-quality controls, schema design, and incident-resolution workflows for the professional Reuters terminals (3000 Xtra) serving dozens of institutional clients across LatAm.
- **11-month assignment in Thomson Reuters' New York office** (Jan–Nov 2009) embedded with the U.S.-based fixed-income analytics team to generate bond-market data coverage for Latin American emerging-market sovereign and corporate bonds — yield curves, spreads, and credit references — for institutional clients during the 2008–2009 global financial crisis.

FX Trader, *Asesores en Valores (Bogotá, Colombia)* May 2012 – Aug 2013

- Operated spot FX positions (COP, USD, EUR, CHF, GBP) on a part-time basis with own capital, applying hedging strategies and discretionary directional positions in liquid currency pairs using the desk's platform.
- Provided risk-hedged investment recommendations and asset-allocation frameworks to high-net-worth clients in coordination with the desk's research team; held **AMIB Level 3** certification as Strategic Investment Advisor.

SELECTED PROJECTS

- **PaPs Mercados – AI-Powered Equity Analytics Platform.** Production-grade equity research workflow used as a pedagogical platform for graduate finance students. Multi-tab Streamlit fundamentals app (profile, valuation, news, peers, EPS, forecast) on a strict layered architecture (UI $\rightarrow$ services $\rightarrow$ adapters $\rightarrow$ domain) with **20+ Financial Modeling Prep adapters** governed by per-endpoint cache TTLs and 429-aware retries; ships a 30-day GBM probability fan from EWMA (λ=0.94, RiskMetrics) and rolling-60d σ estimators with 68%/95% bands, Anthropic Claude streaming for narrative synthesis, and a companion FastAPI commercial backend with Google OAuth + JWT, Stripe Checkout/billing portal, SQLAlchemy 2.x + PostgreSQL via Alembic, deployed on Render. *github.com/leoromero-quant/paps-mercados-app* • *live demo*
- **Prob-Edge – Risk-Neutral Density SaaS for Options Markets.** Quantitative options-analytics platform that recovers risk-neutral densities from live tastytrade option chains using the Breeden–Litzenberger framework (put-call parity, PCHIP interpolation of clean call prices, numerical second derivative, forward-correction normalization to $\int q(K)\,dK \approx 1$ and $E_Q[S_T] \approx S_0 e^{(r-q)T}$); ships a Streamlit 68%/95% probability-cone visualization and a FastAPI REST backend with JWT auth, async SQLAlchemy credit ledger, Stripe subscriptions, per-plan rate limiting, and tastytrade + Financial Modeling Prep adapters, containerized with Docker for Render deployment. *github.com/leoromero-quant/prob-edge* • *live demo*
- **Portfolio Skills for Claude – Agent-Skills Toolkit for FMP-Powered Portfolio Management.** Claude Agent-Skills toolkit packaging applied portfolio-management workflows as declarative, Claude-invokable capabilities over the Financial Modeling Prep API: quote and historical retrieval, sector and peer exposure mapping, risk-return diagnostics (VaR, Sharpe, drawdown, beta), multi-asset morning briefings across equities, indices, commodities, FX, and crypto, and VIX-based volatility alerting. Each skill exposes a SKILL.md contract so Claude composes them on demand into portfolio reviews, rebalancing rationales, and risk-adjusted allocation reasoning, consumed through the MCP connector layer in daily research workflows.
- **Smart-Beta – Sector-Relative Alpha & Factor Analysis Framework.** Production-grade Python package implementing the Sharpe single-index model generalized across iShares sector ETF benchmarks. Single-index OLS regression of single-name returns against sector ETFs, with rolling alpha / beta / residual-risk / R^2 decomposition, an above-sector-mean candidate filter, and an Alpha vs. Risk scatter visualization. End-to-end runnable example produces a tech-sector ranking and a publishable plot from one year of yfinance data. Companion to the doctoral dissertation. *github.com/leoromero-quant/smart-beta*

SELECTED PUBLICATIONS & ACADEMIC ENGAGEMENT

- **Doctoral monograph** – *The Inverted Yield Curve and Its Effects on Capital Markets: A Spectral Analysis of a VAR Cointegration Model by S&P Sector.* Published by Universidad de Guadalajara (2019).
- **Book chapters** – Co-authored chapters on *ESG analytics in capital-markets research* and on *COVID-19 financial data analysis*, edited academic volumes of the Universidad Panamericana School of Business (years TBD).
- **Working paper in progress** – Implied-volatility modeling as a predictor of equity-price dynamics: empirical evidence from U.S. listed options.
- **Conference chair** – Organizer of the ESM (Empresa, Sociedad, Mercados) doctoral conference, Universidad Panamericana School of Business.

EDUCATION

PhD in Economics – Universidad de Guadalajara, Mexico (2016 – 2019) *Dissertation: The Inverted Yield Curve and Its Effects on Capital Markets – applied financial econometrics (ARIMA, GARCH, VAR cointegration, spectral analysis) on yield curves, sector equity indices, and risk premia. Director: Prof. Antonio Ruiz Porras (UdeG). Concurrent research stays at FAU Erlangen-Nürnberg presenting doctoral progress in research colloquia, with co-evaluation by Prof. Jürgen Kaehler (formerly LSE).*

MSc in International Economic Relations – Universidad de Guadalajara, Mexico (2014 – 2016) *Specialization in Financial Econometrics. Thesis directed by Prof. Antonio Ruiz Porras (UdeG); research stay at FAU Erlangen-Nürnberg, Faculty of Economics, with thesis defense co-evaluated by Prof. Jürgen Kaehler.*

Specialization in Portfolio Management – CESA – Centro de Estudios Superiores en Administración, Bogotá, Colombia (2004 – 2005) *Postgraduate specialization in portfolio construction, asset allocation, and capital-markets investment management; completed concurrently with the Thomson Reuters role and financed by the firm as part of professional development.*

BSc in Finance & International Relations – Universidad Externado de Colombia (1998 – 2003)

Awards: Full-tuition government research fellowship (MSc + PhD, 2014–2019) • Research stay at FAU Erlangen-Nürnberg, Faculty of Economics, with thesis co-evaluation by Prof. Jürgen Kaehler • Student-voted top finance faculty, Universidad Panamericana.

Certifications: AMIB Figura 3 (Strategic Investment Advisor, Mexico) • RiskMathics – Derivatives • tastytrade – Options & Derivatives • Insurance Broker (Agente de Seguros, Nivel B, Mexico).

Languages: Spanish (Native) • English (Professional; taught graduate finance in English) • German (B2) • French (A2).