

Yadnyeya Vairat

| (530) 715-5462 | yadnyeyavairat@gmail.com | [LinkedIn](#) | [Portfolio](#) |

EDUCATION

Master of Quantitative Finance

Rutgers Business School, Newark, NJ

Dec 2027

Coursework: Algorithmic Trading & Portfolio Management · Derivatives · Fixed Income · Econometrics · Quantitative Methods

Selected to represent Rutgers at the **Rotman International Trading Competition (RITC)** — Toronto, Feb 2027

B.S. in Management Information Systems, Minor in Computer Science

California State University, Chico, CA

Dec 2025

SKILLS

Programming & Tools: Python · C++ · SQL · Bash · Excel · Linux · Bloomberg Terminal · Interactive Brokers API (Market Data & Execution)

Trading & Quantitative Methods: Applied Statistics & Time-Series Modeling · Monte Carlo Simulation · Derivatives Valuation · Multi Factor Modeling · Pairs Trading · Greeks & Delta Hedging · Market Microstructure · Backtesting · Portfolio Optimization · Risk Management

Machine Learning & GenAI: PyTorch · scikit-learn · XGBoost · ETL Pipelines · Spark · Airflow · PostgreSQL · Feature Engineering · AWS · Docker · CI/CD · LLM Agents (RAG, MCP, Knowledge Graphs, Observability)

Markets: Independent Trading since 2021 (Equities, Options, ETFs, Crypto) · Commodities · Fixed Income

EXPERIENCE

AI/ML Engineer

Jun 2026 - Present

Vibe Logics, Dallas, TX (Remote)

- Build Airflow orchestrated Python pipelines to ingest CRM and campaign data through reusable ETL workflows and data analysis.
- Train scikit-learn and XGBoost machine learning models driving conversion scoring, customer segmentation, and budget optimization.
- Develop Plotly and Power BI dashboards using SQL aggregations to visualize conversion trends, customer behavior, and campaign efficiency.
- Integrate OpenAI LLM APIs with model predictions and customer context to generate personalized messaging and automate audience targeting.

Senior Equity Analyst

Oct 2023 - Dec 2025

Chico Creek Capital Investment Fund, Chico, CA

- Led equity research and mentored junior analysts through valuation and pitch development, leveraging Bloomberg for market analysis to generate recommendations for stakeholders, with two positions appreciating 100%+ after purchase.
- Assembled a 96-feature market-indicator library, training an 11-model machine-learning ensemble on selected subsets, producing probability forecasts across five horizons to identify directional signals.
- Automated P&L and portfolio-risk monitoring across 40 equities via Python pipelines, guiding rebalancing with mean-variance and risk-parity optimization benchmarked on efficient-frontier Sharpe ratios.

PROJECTS

Options Pricing & Volatility Surface Engine

- Programmed a Python derivatives pricing engine with Black-Scholes, binomial tree, and Monte Carlo simulation, cross-validating outputs across US equity options to verify convergence and pricing consistency.
- Constructed implied-volatility surfaces from listed option chains across 10 US equities, mapping strike and maturity to reveal volatility smiles, skew, and term-structure dynamics.
- Simulated delta-hedged short volatility positions over 5 years, comparing daily versus weekly rebalancing under transaction costs to quantify P&L variance and hedging cost tradeoffs.

Market Making & Adverse Selection Strategy

- Designed a C++ limit order book market maker providing continuous two-sided liquidity around fair value, simulating fills and spread capture.
- Implemented inventory-aware quoting with volatility-adaptive spreads, skewing prices and sizes using microprice and order-flow-imbalance signals to control directional exposure and inventory risk.
- Benchmarked fixed, inventory-aware, and signal-driven quoting across 100,000+ simulated fills, using 10-second markouts and inventory variance to quantify the adverse-selection tradeoff.

Cross-Asset Futures Relative Value & Statistical Arbitrage

- Researched 40 economically linked futures spreads across equity-index, fixed-income, and commodity markets, applying liquidity filters and cointegration tests where 8 survived Benjamini-Hochberg correction.
- Modeled mean-reverting futures spreads with Ornstein-Uhlenbeck time-series models, estimated a 20-day median half-life, and walk-forward tested hedge ratios, with rolling OLS outperforming Kalman filtering out of sample.
- Converted statistical spread signals into margin-aware futures positions, filtering trades by half-life and expected convergence, leaving 3 profitable out of sample after costs.

AI-Powered Systematic Trading & Research Platform

- Architected a production-grade, cloud-deployed Python quantitative platform with scalable FastAPI services, spanning 9 data providers across the full systematic investing workflow through broker-connected execution.
- Engineered a machine learning pipeline and model library with TradingView integration, turning saved models into a reproducible workbench.
- Developed a portfolio optimization and risk analytics engine spanning 11 methods from Black-Litterman to regime-aware allocation, with Monte Carlo simulation quantifying VaR, drawdown, and volatility.
- Built an algorithmic strategy builder converting signal driven trading rules into backtests across 8 timeframes with transaction costs and slippage.
- Implemented an automated system executing trading strategies via Interactive Brokers under configurable risk limits, logging trade-level P&L.
- Orchestrated 8 multi-agent LLM teams, using knowledge graphs and RAG with MCP tool calls to run platform functions and reason over outputs, making the entire quant stack operable through natural language.