Lance Ladia

Quantitative Researcher - Systematic Futures Trading

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Quantitative futures researcher and trader with nearly two years of live experience developing, validating, and executing intraday strategies. Built an independently managed six-strategy portfolio, published original research on SSRN, and contributed proprietary strategies to a $3M single-family office portfolio. Python used for backtesting, statistical inference, portfolio analysis, and live performance monitoring.

WORK EXPERIENCE

Systematic Futures Trader / Independent Researcher **Cape Coral, FL | 04/2026 – Present**

- Constructed a six-strategy intraday futures portfolio across U.S. and European equity index futures and gold, with all six strategies meeting pre-specified significance, confidence-interval, and statistical-power thresholds before capital deployment. The portfolio produced a backtested Sharpe ratio of 3.04 and Calmar ratio of 3.6 from January 2023 through March 2026.
- Generated live returns of +37.87% in an independently managed account net of commissions from April 1 through July 22, 2026, exceeding SPY by +23.84% over the same period with no statistically significant pairwise association across all strategies and near-zero co-movement with broad equities ($R^2 = 0.0042$ vs. SPY, 0.0004 vs. QQQ).
- Built a real-time Sequential Probability Ratio Test to distinguish normal variance from edge decay, cutting required detection sample size by ~50% compared to fixed-sample tests under specified decay scenarios.
- Conducted original research into a potential relationship between 0DTE dealer gamma hedging and opening-session price behavior, producing a testable structural hypothesis supported by a statistically significant reversal pattern *(published as a working paper; see Publications).*

Equity Index Analyst and Trader – Single-Family Office **Fort Myers, FL | 09/2024 - 03/2026**

- Developed proprietary trend-following and mean reversion futures strategies through a theory-first research process, operating as an independent book alongside the office's core options strategies.
- Established the portfolio risk management framework, applying Kelly fractional position sizing and z-score-based performance, establishing a maximum drawdown at -7.5% and flagging underperforming strategies using pre-specified statistical baselines.
- Modeled volatility regimes using a Markov-switching framework on Fourier-decomposed EMA signals; discontinued after testing showed no statistically significant improvements in strategy performance, avoiding deployment of an unvalidated signal.
- Applied Python (pandas/numpy/scipy.stats) for backtest analysis and statistical validation in strategy research across 10 futures instruments spanning U.S., European, and Asia-Pacific equity indices and commodities.
- Executed ~100 trades/month across a $3M live futures portfolio, responsible for order entry, trade management, and position monitoring across all active strategies with zero risk-limit breaches over 19 months.

PUBLICATIONS

Opening-Range Reversal in Dow Jones Futures: Evidence Consistent with 0DTE Hedging Pressure

SSRN Working Paper, July 2026

- Statistically significant reversal pattern ($n = 194$, $Z = 2.73$, $p = 0.0039$) with subsample robustness testing, historical comparison, and pre-specified falsifiability criteria.
- Available at SSRN: https://ssrn.com/abstract=7124578

EDUCATION

Bachelor of Science, Data Analytics **02/2026 – Present**

Western Governors University — Remote

SKILLS

- **Statistical Methods:** Sequential Probability Ratio Test (SPRT) | Binomial hypothesis testing & power analysis | Wilson score confidence intervals | Phi coefficient correlation analysis | Bootstrap resampling | Markov-switching volatility regime modeling
- **Python:** pandas / NumPy/ SciPy | Statistical hypothesis testing | Backtesting & performance analysis
- **Quantitative Finance:** Kelly criterion & fractional Kelly sizing | Intraday market microstructure | Risk-adjusted metrics (Sharpe, Sortino, Calmar) | Futures execution