Alexander M. Roesler

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Education

University of California, Berkeley – Haas School of Business **Expected Mar. 2027**
Master of Financial Engineering *Berkeley, CA*

University of California, Los Angeles **Dec. 2025**
Bachelor of Science in Applied Mathematics; Minor in Statistics & Data Science *Los Angeles, CA*

- **GPA: 3.82/4.00**, **Dean's List**
- **Courses:** Probability, Stochastic Processes, Linear Algebra, Machine Learning, Computation & Optimization for Statistics, Regression & Data Mining, Game Theory, Econometrics, Mathematical Optimization, Monte Carlo Methods, Mathematics of Finance / Derivatives, Algorithms, Numerical Methods, Partial Differential Equations

Oxford Algorithmic Trading Programme **Sep. 2022 – Dec. 2022**

- Built Python vol-scaled momentum; debiased backtests; walk-forward OOS; CAPM/FF3 alpha, VaR/ES stress tests

Skills & Certifications

Programming: Python (NumPy, pandas, SciPy, statsmodels, scikit-learn, PyTorch), C++, R, SQL, Bash
Tools: Docker, Git, Jupyter, Linux/WSL, Microsoft Office (Excel, PowerPoint)
Interests: Putnam Competition (Participant, 2025; self-study in proofs/contest math), Calisthenics, Poker
Certifications: SOA Exam P – Passed (Sep. 2025)

Research Experience

Crypto Statistical Arbitrage Strategy | *Independent Research Project* *Jan. 2025*

- Data pipeline & hygiene: Built a CoinMarketCap ingestion (rate-limited + retry/backoff) to generate a 2-year OHLCV token panel (729 days, 174 tokens); excluded stablecoins/wrapped assets, applied survivorship + volume/history filters with monthly reconstitution, and computed ETH-excess log returns for modeling
- Stat-arb research & results: Implemented a daily walk-forward OOS stat-arb pipeline (no-lookahead, 365d train / 28d test) using signed k-NN graphs, SPONGE/BNC/signed-spectral clustering, and PCA market-mode removal; best configuration (cluster-deviation, SPONGE k=3) delivered 1.76 Sharpe / 29.2% annualized return net of 25 bps/side, −23.9% max drawdown, ~27.5% avg daily turnover, and ETH/PC1 beta ≈ 0.02/0.00

Intraday Optimal Execution | *Independent Research Project* *Jul. 2025*

- Built a minute-bar execution simulator from limit order book data using time-varying intraday depth and a piecewise temporary-impact model (flat-to-depth, concave power-law tail, $p \approx 0.45$); solved the KKT schedule over the trading day via 1-D bisection on the Lagrange multiplier to minimize implementation shortfall
- Smoothed the intraday liquidity profile with a penalized spline (cross-validated) and estimated a spread-based per-share cost proxy (median half-spread); ran holdout checks and cost/parameter-sensitivity stress tests confirming the schedule scales with liquidity while remaining stable to microstructure noise

Option Pricing with Sentiment-Enhanced Volatility | *Class Group Project* *Sep. 2024 – Dec. 2024*

- Tested whether Reddit/News sentiment improves implied volatility prediction; benchmarked LSTM, regression, and neural networks against baseline—found marginal gains with overfitting risk in deep models
- Developed Streamlit option pricing tool with Black–Scholes + implied-vol inversion (brentq); analyzed 2,600+ posts across 8 market conditions; documented regime-dependent performance and feature importance

Professional Experience

William Blair Financial Services **Chicago, IL**
Private Wealth Management Intern *Jun. 2024 – Aug. 2024*

- Built a Sharpe-ranked quant-fund screener from PitchBook returns; computed Sharpe/Sortino/Calmar, drawdown, skew/kurtosis, and alpha/beta vs S&P 500 (3M T-bill rf); wrote PM memos on fees/capacity/fit

Angle Advisors Investment Banking **Birmingham, MI**
Mergers & Acquisitions Intern *Jun. 2022 – Aug. 2022*

- Developed DCF/LBO models, used APV when leverage varied, ran Monte Carlo simulations to generate EV ranges