

EMIL BLAIGNAN

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EDUCATION

University of California, Los Angeles (UCLA)

Mathematics/Economics B.S. with Specialization in Computing

Los Angeles, CA

Expected June 2026

- **GPA:** 3.8/4.0 | Dean's List x3
- **Relevant Coursework:** Stochastic Processes, Econometrics, Financial Mathematics, Numerical Methods, Linear Algebra, Probability and Statistics, Optimization, Python/ML, C++, Micro/Macroeconomic Theory, Multivar Calculus

PROFESSIONAL EXPERIENCE

UCLA Design Media Arts (DMA)

Printlab Consultant

Los Angeles, CA

November 2022 – Present

- Orchestrated workshops, training, and equipment setup, enhancing operational efficiency and productivity by 80%

California Financial Partners Inc. (LPL Financial)

Wealth Management Intern

Glendale, CA

July 2025 – September 2025

- Developed macro asset pricing diagnostics that analyzed term premia, curve steepening, and liquidity constraints to identify asymmetric opportunities and support a ~30% fixed-income duration rebalance for HNW-client portfolios.
- Implemented Python models to compare rate-cut paths and their impact on curve shapes, providing quantitative inputs into scenario heuristics that supported roughly 15-20% reallocation across muni maturities.
- Analyzed international equity valuations and the impact of a weakening dollar on USD-denominated returns, identifying asymmetric upside abroad and contributing to an approximate 8% shift in ex-US exposure.

RESEARCH EXPERIENCE

Quantile-Based Momentum Forecasting *Working*

Bruin Reserve Bank - UCLA

Los Angeles, CA

November 2025 - Present

- Converted academic paper Park et al. (2022) on IQF-learning architecture to construct distribution-aware return forecasts for long-short equity portfolios, improving strategy Sharpe.
- Implemented constrained numerical interpolation to enforce non-crossing quantile curves, using monotone spline adjustments that reduced tail-instability by about 35% in high-volatility regimes.
- Designed an algorithm using numerical root-finding to solve for Kelly-optimal leverage under skew-aware quantile forecasts, enabling adaptive sizing rules that reduced leverage misallocation by about 15%.

Optimal CBDC Remittance Corridors: A Welfare Maximization Framework *Working*

Bruin Reserve Bank - UCLA

Los Angeles, CA

February 2025 – Present

- Proposed optimization framework on CBDC deployment across remittance corridors to reduce costs to G20 3% target.
- Modeled liquidity-dependent FX spreads and endogenous “cold start” simulation dynamics in thin remittance corridors, enabling identification of liquidity-trap regions unsuitable for CBDC rollout.
- Implemented minimax-regret robust optimization over uncertain FX and adoption parameters, generating corridor rankings resilient to model misspecification and parameter shocks, and reducing costs to lower income brackets.

PROJECTS

Macro Drivers of Monthly S&P 500 Returns

March 2025 – June 2025

- Built transformed regression in R, cutting out-of-sample RMSE from 4.78 → 4.35 (−9%) for S&P 500 monthly rtns.
- Validated coeff. stability w/ 500 bootstraps, producing 95% CIs and confirming robustness of VIX & UNRATE effects.
- Quantified marginal impacts of macro factors, finding +1 VIX → −0.27% rtn, Fed tightening → −0.92% monthly rtn.

YieldCurveForecaster

January 2025 – March 2025

- Produced a Dash/Plotly 3D yield curve dashboard analyzing 20 years of Treasury data to forecast yields at 8 maturities.
- Implemented 4 backtested models, reducing forecast error by 65% with 55% 12-month directional accuracy.
- Developed inversion analytics with 95% regime accuracy, enabling macro-strategy backtesting across 5+ regimes.

TECHNICAL SKILLS

- **Languages:** Python, C++, R
- **Frameworks:** NumPy, Pandas, Matplotlib/Seaborn/Plotly, SQL/DuckDB/Polars, Scrappy, JAX/PyTorch
- **Technologies:** Jupyter Notebook, VS Code, Git
- **Research Interests:** Yield curve forecasting, systematic macro, and optimal portfolio management.
- **Other Activities/Leadership:** Bruin Reserve Bank (Researcher/Head of competitive quant team) and ThaiSA (member)