WEI (WILLIAM) CHEN

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EDUCATION

UCBB Madison School of Management — Bar Bara, CA
Master of Financial Engineering — GPA: 3.38/4 — December 2025
Relevant Courses: Derivatives, Fixed-Income Markets, and Econometrics

The English University of Hong Kong — Hong Kong
B.A., Business Administration, Minor in Statistics — December 2022
Relevant Courses: Time Series, Non-Parametric Statistics, and Deep Learning

SKILLS & PROFESSIONAL CERTIFICATIONS

Technical Skills: Python (NumPy, Pandas, Scikit-learn, Polars and Numba), SQL, and Git
Certifications: SOA Exam QFIQF
Other Skills: Monte Carlo Simulation, Derivatives Pricing, and Machine Learning

PROFESSIONAL EXPERIENCE

Proton Capital Management — United States
Quantitative Research Intern — June 2025 – September 2025

- Built a systematic screening framework to identify mispriced fixed income securities using yield spread analysis across 500+ instruments, supporting position-level risk interpretation and relative value decision making.
- Implemented a Python scenario-based interest rate stress testing engine, quantifying DV01 and convexity impacts under parallel shifts, twists, and butterfly moves to explain risk changes across scenarios.
- Automated daily risk reporting by aggregating key Greeks across the book, reducing manual reporting time by 60% and eliminating reconciliation errors through consistent data checks.

General Life Insurance — Hong Kong
Actuarial Analyst — January 2023 – September 2024

- Designed an experience study framework using 200K+ policy records to update lapse and mortality assumptions, emphasizing statistical validation and clear documentation for governance under IFRS 17 processes.
- Automated model validation workflows in Python to replace manual Excel checks, reducing quarterly reporting cycle time by 40% while improving control, reproducibility, and auditability of results.
- Built scenario projection models for new products, quantifying capital requirements and sensitivity under stressed assumptions to support risk discussions and stakeholder communication.

PROJECTS

Credit Risk Modeling for Corporate Bond Portfolios

- Calibrated reduced-form hazard rate and Merton structural models to CDS spreads for 300+ issuers, translating market credit factors into issuer-level default risk inputs for portfolio analysis.
- Built a credit portfolio simulation engine with correlated default processes to estimate portfolio VaR and CVA under historical and stressed correlation assumptions using Monte Carlo methods.
- Ran sensitivity analysis on recovery rates and default correlations, quantifying parameter impacts on synthetic CDO tranche pricing to support model monitoring and risk explanation.

Fixed Income Relative Value and Curve Trading Strategy

- Constructed a PCA-based yield curve factor model extracting level, slope, and curvature components, enabling systematic relative value identification across 2s5s10s and butterfly structures.
- Backtested carry-and-rolldown strategies on US Treasury and swap markets (2015–2024), achieving Sharpe 0.72 gross with max drawdown of -6.3% over the full sample period.
- Implemented DV01-neutral sizing with stop-loss triggers and z-score mean-reversion filters, improving risk-adjusted returns by 25% and reducing whipsaw trades by 35%.

COMPETITIONS

Morgan Stanley Quant Finance Challenge 2024 (Top 10 Finalist)

- Developed a dynamic delta-vega hedging strategy for a structured equity product under stochastic volatility, minimizing P&L variance across 10,000 Monte Carlo paths with explicit hedge rebalancing logic.
- Designed a stress testing framework evaluating portfolio resilience under 8 macro scenarios, including rate shocks, credit spread widening, and equity drawdowns, to communicate scenario-driven risk changes.