JP PENG

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EDUCATION

North Carolina State University **Raleigh, NC**
Master of Financial Mathematics (GPA: 3.82/4.0) *December 2025*
***Relevant Coursework**: Stochastic Calculus, Derivatives Pricing (bonds, energy options/forwards, swaps), Monte Carlo Simulation, Machine Learning, Operations Research, Statistical Inference, Quantitative Trading, Yield Curve Bootstrapping & Fixed Income, Time Series*

University of California, Irvine **Irvine, CA**
Bachelor of Science, Mathematics (GPA: 3.6/4.0) *June 2024*
Bachelor of Arts, Business Administration, Emphasis in Finance (GPA: 3.6/4.0)
***Relevant Coursework**: Partial Differential Equations, Advanced Linear Algebra, Vector Calculus, Stochastic Processes, Real & Complex Analysis, Business Management, Supply Chain Modeling (Newsvendor, MAPE), Business Analytics, DCF Analysis, Excel Modeling, International Finance*

PROFESSIONAL SUMMARY

Quantitative modeler and Financial Mathematics graduate with a strong foundation in financial modeling, quantitative analysis, and systematic trading. Experienced in DCF valuation, cash-flow forecasting, scenario analysis, and Excel-based financial modeling, alongside Python/SQL-driven time-series modeling, Monte Carlo simulation, risk attribution, volatility forecasting, and portfolio optimization. Built production-grade data pipelines, backtesting frameworks, and risk models for equities and derivatives with robust out-of-sample performance.

WORK EXPERIENCE

Ubiquant *Haidian, Beijing*
Summer Quantitative Developer July 2025 – August 2025
- **Orchestrated** Python pipelines for large-scale trade & market data, accelerating research and portfolio analytics
- **Conducted** implementation shortfall and transaction cost analysis to evaluate execution quality and reduce slippage
- **Developed** order–trade reconciliation tools to improve accuracy of portfolio P&L and performance attribution
- **Automated** reporting dashboards for trading, P&L attribution, and real-time risk monitoring to support portfolio decisions

Ubiquant *Haidian, Beijing*
Independent Quantitative Equity Research April 2025 – July 2025
- **Architected** SQL Server–Python (PYODBC) equity data warehouse; replicated *101 Formulaic Alphas* signals with liquidity filters
- **Selected** factors via IC tests and Fama–MacBeth regressions for systematic portfolios
- **Modeled** volatility with EGARCH & regime-switching Gaussian HMM to dynamically scale exposures
- **Applied** Barra risk model (MSCI CNE5) & PCA risk-parity optimization; achieved Sharpe 1.2, max DD 6%, 14.4% return

North Carolina State University *Raleigh, NC*
Project Leader & Program Ambassador August 2025 – December 2025
- **Led** a 7-member team to build a daily Nasdaq equities strategy using fundamental signals and portfolio construction
- **Vectorized** core features utilizing Python Pandas and NumPy; applied ACF/PACF and Newey-West tests to ensure signal robustness
- **Delivered** 1.4 strategy Sharpe, max DD 8%, 16.8% total return over a 2-year backtesting period
- **Represented** the program at industry events and mentored new students to support outreach and engagement

Safran Cabin, Inc. *Huntington Beach, CA*
Supply Chain Strategic Purchasing Procurement Intern June 2023 – September 2023
- **Streamlined** statistical demand forecasting and cost analysis in Excel to optimize inventory and supplier decisions
- **Calibrated** supply and P&L forecasts through financial models to support budgeting and operational efficiency
- **Negotiated** aerospace vendor contracts and reduced 7.2% procurement costs; lowered potential production carbon emissions by 5%

PROJECTS

Stock Monte Carlo Simulation January 2025 – March 2025
- **Constructed** Monte Carlo jump-diffusion simulation engine for tail-risk modeling and portfolio VaR stress testing
- **Accelerated** large-scale simulations using variance reduction techniques (Antithetic, Control Variates)
- **Priced** and valued *iSoftstone* company convertible bond under DCF & Black-Scholes; evaluated hedging strategies for downside risk

Forecasting Bitcoin: A Comparison of Time Series & Machine Learning Approaches August 2024 – December 2024
- **Designed** crypto time-series pipeline with lagged features for volatility modeling
- **Quantified** conditional volatility using GARCH/EGARCH and XGBoost, achieving ~0.90 R^2 out-of-sample
- **Benchmarked** models via walk-forward holdout tests to select robust, production-ready signals

Iowa Housing Price Prediction August 2024 – October 2024
- **Engineered** structured housing dataset with encoding, imputation, normalization, and feature selection; built end-to-end ML pipeline
- **Trained** and tuned Ridge/Lasso regressions with cross-validation and regularization; achieved ~0.90 R^2 and low MAE out-of-sample
- **Cross-validated** model for real-time price inference and feature attribution, delivering ~13% live forecasting error

S&P 500 Return Variance Decomposition Principal Component Analysis (PCA)
Dynamic Deep Hedging Trading Strategy
Risk-Free Rate Change Forecasting – A Machine Learning Approach

SKILLS

- **Programming & Technical:** Python (NumPy, Pandas, Scikit-Learn, SciPy, Numba), SQL, R, Matlab, SAS, Machine Learning: PCA, Linear/Logistic Regression, Random Forest, XGBoost, K-means & KNN, SVM, LSTM
- **Software:** DBeaver, Microsoft SQL Server, Excel (Financial Modeling, Scenario Analysis), Bloomberg Terminal, Interactive Brokers
- **Language**: Bilingual: English & Mandarin