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, Monte Carlo Simulation, Machine Learning, Operational Research, Statistical Inference & Modeling, 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, Business Analytics, Discounted Cash Flow (DCF) Analysis, Excel Modeling, International Finance, Supply Chain Modeling,*

PROFESSIONAL SUMMARY

Quantitative Researcher and Financial Mathematics graduate with 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 (GARCH/EGARCH), 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 *Tsinghua Science Park, Beijing*
Quantitative Developer Summer Analyst July 2025 – August 2025
- **Orchestrated** vectorized Python pipelines for large-scale trade and 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 *Tsinghua Science Park, Beijing*
Quantitative Researcher Summer Analyst April 2025 – July 2025
- **Architected** SQL Server–Python (PYODBC) equity data warehouse; replicated *101 Formulaic Alpha* 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

Safran Cabin, Inc. | **Supply Chain Internship** *Huntington Beach, CA*
Supply Chain Strategic Purchasing Intern June 2023 – September 2023
- **Streamlined** statistical demand forecasting and cost analysis using Excel VBA macros to optimize inventory and supplier decisions
- **Calibrated** supply and P&L forecasts through Excel macros to support budget planning and operational efficiency improvements
- **Negotiated** aerospace vendor contracts and optimized procurement costs by 7.2% using quantitative analysis

PROJECTS

Multi-Alpha Trading Strategy & Portfolio Management August 2025 – December 2025
- **Led** a team of seven to implement a daily-frequency trading strategy of the U.S. NASDAQ equities using fundamental trading signals.
- **Vectorized** basic variables utilizing Python pandas and numpy; applied Student-t hypothesis testing for signal reliability
- **Analyzed** stock periodic movements through ACF/PACF time series lag tests & adjusted to Newey-West testing statistics accordingly
- **Delivered** 1.4 strategy Sharpe, max DD 8%, 16.8% total return over the 2-year horizon

iSoftstone stock Monte Carlo Simulation Jump Diffusion GBM 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 Variate)
- **Priced** and Valued *iSoftstone* convertible bond under risk-neutral probability measure; 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 signal

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 Stock Variance Principle 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, Gradient Boosting/XGBoost, K-means & KNN
- **Softwares: DBeaver, Excel (VBA & Macro), Bloomberg Terminal, Interactive Brokers**
- **Language**: Bilingual: English & Mandarin