Xiaozhe (Josh) ZHANG

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Education

Boston University, Questrom School of Business, Boston, MA — Expected Jan. 2025
M.Sc. Mathematical Finance & Financial Technology
- **Courses**: Econometrics, ML, Deep Learning, Stochastic Calculus, Algo Trading, Credit Risk, Fixed Income

Lehigh University, Bethlehem, PA — May 2023
B.Sc. Finance / Minor: Fintech GPA: 3.8

Skills

Programming: Python, R, SQL, Java, C++, Scikit-learn, TensorFlow, pypfopt
Methods: Time Series, Machine Learning, Bayesian, Factor Modeling

Work Experience

Rebel Financial, Columbus, USA — May 24 – Aug. 24
Investment Intern (Quantitative Oriented)
Model Consolidation and Robust Bond Portfolio Construction
- Reduced duplication and identified key models using clustering to streamline model implementation.
- Applied saddle point optimization to develop robust bond portfolios and evaluated worst-case effectiveness with the Hull-White model, showing 12% lower volatility in adverse conditions.

Equity-Driven Portfolio Performance Analysis
- Validated the diversifying effect of equity and high yield on equity-bond portfolios by implementing different allocation strategies.
- Designed a quantitative algorithm to dynamically backtest and adjust mixed portfolios, enhancing portfolio growth and tax efficiency.

Johnson Controls, Milwaukee, USA — May 22 – Aug. 22
Finance Intern (Data Oriented)
- Developed a machine learning-based cost projection model using moving average and pressure tests, enhancing outlier detection and improving expense and budget forecast accuracy by 10%.

Projects

Boston University, Questrom School of Business MSMFT – Financial Econometrics Course — Spring 24
Climate Risks Analysis and Weather Derivative Modeling
- Modeled a denoised temperature time series using a linear model and Fourier Series to extract residuals.
- Developed an OU process-based temperature model with spline interpolation to simulate temperature volatility.
- Priced weather derivatives using Black-Scholes approximation and Monte Carlo simulation.

Boston University, Questrom School of Business MSMFT – Algo Trading Course — Spring 24
Momentum-Based Algorithm Trading via QuantConnect
- Implemented a momentum-based model for Nasdaq constituents, achieving a 15% return with a 0.5 Sharpe ratio in backtesting and a 4% return over 3 months live.

Home Credit - Credit Risk Model Stability, ***Silver Medal (35/3856) ------ Kaggle Competition*** — Summer 24
- Designed a voting ensemble model combining CatBoost and LightGBM classifiers with cross-validation.
- Reduced memory usage of large datasets by 25% and enhanced data quality through extensive cleaning.
- Engineered 400+ features using statistical measures and categorical data handling to improve model input.