Qingchuan Xu, CFA, FRM

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Education

Illinois Institute of Technology — *Chicago, IL, USA*

Master in Mathematical Finance — *Aug. 2013 - May. 2015*

- Stuart School Dean Scholarship - $14667
- Relevant Coursework: C++ with Financial Application, .Net and Database Management, Mathematical Finance, Stochastic Process, Options Futures & OTC Derivatives, Fixed Income Modeling, Quantitative Trading Strategy, Monte Carlo Methods in Finance, Computational Finance

Southwestern University of Finance and Economics — *Chengdu, China*

Bachelor of Economics in Finance — *Sep. 2009 - Jun. 2013*

- Academic Excellence Scholarship & Social Practice Scholarship

Work Experience

Milliman — *Chicago, IL*

Quantitative Trader & Risk Manager — *Apr. 2019 - PRESENT*

- Manage portfolios of exchange-traded and OTC derivatives in order to offset the liability risk of insurance products with embedded guarantees, including both variable and fixed indexed annuities.
- Execute both OTC and listed equity, FX and IR derivative instruments such as vanilla and exotic options, swaps, forwards and futures
- Design, implement and back-test both static & dynamic hedging strategies including quantitative models for market consistent valuation and pricing of equity and interest rate derivatives for different risk management & hedging programs
- Client management through weekly conference calls including market updates, review of program performance and expectations, market sensitivities (“Greeks”) behavior, transaction costs, and overall hedge program effectiveness

Security Benefit — *Topeka, KS, USA*

Quant Trader/Analyst — *July. 2015 - Mar. 2019*

- Responsible for the firm’s over $15 billion fixed index annuity, foreign currency investment ,and interest rate hedging programs
- Develop and maintain the capital market assumptions used in modeling and forecasting activities, such as implementing customized risk monitors to manage market risk for different hedging portfolios
- Primary owner of firm’s derivative model library, which includes Black-Scholes Model, Stochastic Volatility Models(Heston & Bates model), Short Rate Model(Hull-White model), and optimization & calibration methods
- Implemented closed-form and Monte Carlo methods to price equity derivatives (Vanilla, Asian and Cliquet options), interest rate derivatives (interest rate swap, Libor cap and swaption), foreign currency derivatives (forward and cross-currency swap)
- Implemented derivatives valuation models in 3rd-party financial analytical platforms(Numerix and FinCAD)
- Implemented algorithm to analyze liability policy holder’s behavior and mapping asset & liability using machine learning techniques

Coding Projects

Quantitative Investment Strategy Implementation in Python & R

Machine Learning Methods in Quantitative Analysis

- Securities clustering analysis using Gaussian Mixtures/EM via K-Means and Hierarchical Clustering
- PCA of securities return using 10 years of daily data, return regression and prediction using OLS vs. SVM
- Portfolio category analysis using classification decision tree and Neural Networks

Trading System Design & Implementation in C#

Algorithm Trading System using Trader API

- The trading system receives data directly from exchange and executes orders based on the algorithms such as EWMA price or Bollinger Bands.
- Wrote SQL query and stored procedure to manage the database of trading records and PnL
- Back-tested and modified trading strategies based on historical data and implemented regime switch model based on security’s volatility

Additional Information

Programming Python, C++, C#, MATLAB, SQL, MongoDB

Certificate Chartered Financial Analyst (CFA), Financial Risk Manager (FRM)