KEITH A. LEWIS [KAL@KALX.NET]

Quant, Technologist, Businessman

Business

Bloomberg LP, Senior Software Engineer (2015—2018)

Responsible for developing core infrastructure used by all enterprise applications and supporting current products. Core components written in C++ but interoperate with Python, JavaScript, Java/Scala, and C#.

Designed and wrote MiFID II APA distribution using Java/Camel/Kafka.

KALX LLC, Managing Member (2002—present)

KALX provides quantitative and technology solutions for small to medium sized hedge funds and other financial institutions. We produce high quality software tools and analytic libraries that can outperform those written by large investment banks for trading and risk management.

Solutions provided for customers include modeling expected tax liabilities for municipal bond refunding, American option pricing models, and variance swap valuation and hedging tools.

Recent work involves enhancing a trade execution engine for managing order placement based on real-time queue position estimation. KALX has also developed an Excel based suite of tools for modeling, testing, and implementing real-time tick trading strategies.

Analyzed large datasets of FX trades incorporating high frequency tick data in order to enhance alpha on the trade flow from a major ECN.

Banc of America Securities, Principal (1999—2002)

Developed the Equity Derivatives analytics library for the Equity Financial Products group. Delivered production quality libraries to the IT group. Built and supported the Excel add-in library used throughout the company.

Morgan Stanley Dean Witter & Co., Vice President (1996—1999)

Responsible for running the technical side of Morgan Stanley's AAA subsidiary. Primary responsibilities were to ensure correct capital calculations, interact with traders, controllers, and auditors, and negotiate model enhancements with rating agencies. Enhanced a portfolio simulation system that was supported worldwide (New York, London, Tokyo, Hong Kong, and Sydney) using a multi-tier client/server architecture and parallelized compute engines.

Bankers Trust, Vice President (1993—1996)

Member of Global Analytics group responsible for development and support of all analytics used for client business at Bankers worldwide. Responsibilities included day-to-day modeling and pricing of trades, support for internal clients, building tools for analyzing historical and simulation data, and re-engineering analytic libraries. Integrated object oriented database with analytics and existing risk system framework in an Unix, NT, and VMS environment.

Met Life, Quantitative Analyst (1991—1993)

Developed analytics for the MBS trading desk. Applications included portfolio targeting, MBS analytics, real-time data acquisition, and integrating 3rd party products. Designed and configured development environment for Unix (SunOS, AIX) network.

Academia

Columbia University, Adjunct Professor

Computational and Quantitative Finance

Cornell Financial Engineering Manhattan, Adjunct Professor

Equity Derivatives.

Rutgers University, Lecturer

Interest Rate Derivatives

New York University, Adjunct Professor

Derivative Securities.

Columbia University Executive MBA Program, Adjunct

Derivative Securities.

Brown University, J. D. Tamarkin Assistant Professor (1987—1991)

Research on invariant subspaces of bounded linear operators on Hilbert spaces. Taught classes including graduate level seminars and senior level courses in Probability, Statistics, PDE's, and Fourier Analysis. Used computers extensively for course work and research.

Education

University of Hawaii at Manoa MA (1983) PhD (1987) Mathematics

Dissertation: *Functional Calculi, M-Spectral Sets, and Invariant Subspaces*

Arizona State University BA (1981) Mathematics

Recipient: *Charles Wexler Mathematics Prize*