PETER N. FRAENKEL

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PROFESSIONAL EMPLOYMENT

Morgan Stanley (2/19 to present) Core platform developer for functionally-oriented, asynchronous and distributed risk management system; develop and extend system in Scala and via Scala compiler modifications.

Acyclic LLC (9/13 to 2/19) Software engineering consultation, with emphasis on distributed, functional programming approaches to risk management. Retained by a several top tier investment banks, including Morgan Stanley (see above).

Managing Director, UBS (7/10 to 6/13) Head of the Quantative Technology group, responsible for technical direction of the global quant team. Architect and manager for RISE, a system for distributed execution and storage of financial objects. (UBS largely shuttered their investment bank in 2013.)

CTO, Pragma Securities (2/07 to 2/10) Ran technology and research for algorithmic execution broker. Built complete technical organization consisting of development, application support, engineering, QA, quant and PM. Led research in transaction cost analysis, trading microstructure, dark pool behavior and algorithmic design; designed major algorithms, including our dark pool aggregator; implemented analytics in java and matlab. Wrote whitepapers and worked directly with major clients and journalists to promote Pragma's offerings.

Managing Director, Morgan Stanley (5/94 to 12/06)

04-06 Managing Director for Equity Risk and Pricing Systems (RPS), a team of 100 people in New York, London and Hong Kong, responsible for global real-time risk management, analytical libraries, exotics booking, scenario calculation plant, end-of-day and regulatory risk reporting, analytical data, pricing tools, tactical spreadsheet tools and volatility trading engines.

99-03 Executive Director. Responsibilities grew over this time from QPG (see next item) to the full team described above. During this period, designed, built and deployed the general Monte-Carlo engine/model and associated booking and control framework used for the equity divisions's exotic multi-asset trades.

95-98 Vice President. Ran the Quantitative Programming Group (QPG), a team of 5-10 people in New York responsible for a model library and associated analytical tools and interfaces. While ultimately equity-focused, we also provided models for commodities and fixed income. Designed and coded most of the core library in C++.

Vice President, Paine Webber (11/91 to 5/94)

92-94 Equity Derivatives desk quant. Designed and oversaw programming of major real-time option portfolio analysis and risk management tool; wrote many models for this tool in C.

90-91 Performed econometric studies on corporate and government bonds for firm risk management.

Bear Stearns (11/90 to 11/91) Priced specialty options. Developed hedging strategies for Japanese warrant trading. Developed and simulated reversal/momentum and fundamental-based trading strategies.

AT&T Bell Laboratories (6/90 to 11/90 Systems Engineering for Accumaster Services Workstation (don't ask).

Laboratory of Atomic and Solid State Physics, Cornell (6/85 to 6/90) Research assistant.

PATENTS

US9305111B1 System and method of performing quantitative analysis via graph nodes representing programs

US9317805B1 System and method of performing modular quantitative analysis with nodes that have contextual labels

ACADEMIC EXPERIENCE

- Recurse Center, participant, Summer 2013
- Fellow of NYU Courant Mathematical Finance Masters program, 1998-present.
- PhD, Cornell University, Physics, May 1990.
- BA, Haverford College, Physics (magna cum laude, ΦBK) May 1984.

SKILL SUMMARY

- Design, implementation, deployment, support and monitoring of enterprise quantitative systems using modern languages and architectures.
- Coding, project management and architecture using (in reverse chronological order) scala, java, python,perl, c[++]; historical experience with Fortran, various ancient assemblers, lex/yacc, awk, etc.; amateur enthusiasm for clojure.
- Hiring and management of programmers, quants, managers and project managers.
- Design of large-scale, distributed computing and data applications.
- Exotic derivative modeling and multi-currency/multi-underlier structuring, including pricing, risk aggregation, scenario analysis, regulatory control and systems integration.
- Working closely with traders, controllers, operations and risk management to create and organize complex requirements.
- Algorithmic execution and transaction cost analysis, high frequency data technicques.

PHYSICS RESEARCH

Low Temperature Ultrasonic Measurements (1984-90, with John Reppy at Cornell): Developed technique for ultrasound studies of superfluid ^{3}He at mK temperatures. Results affect understanding of BCS superfluid theory. Essential to work was extensive computer control and analysis.

Digital Imaging of Convective Pattern Evolution (1982-84, with Jerry Gollub at Haverford): Designed hardware and software for studying the pattern evolution of chaotically induced convection patterns, using image enhancement and pattern recognition techniques.

HOBBIES and ACTIVITIES

- Coding, cooking, guitar, reading.
- Whatever my daughters want me to do.