

David Lindsay, BSc Joint (Hons)., PhD

E-Mail: david.lindsay1979@googlemail.com Web: <http://www.david-lindsay.co.uk>

Profile

I am an experienced Quantitative Trader with a solid working knowledge in the application and research of machine learning algorithms to solve complex financial data mining and classification problems for PnL generation, particularly in ~~the~~ FX Spot (2 years market making followed by 2 years systematic prop trading) and European Cash Equities markets (2.5 years internal market making and risk management). I am strongly technically minded and theoretical, yet ~~also~~-equally strategic and practical in my approach. I am a proven strong programmer and have an in-depth understanding of how trading systems function from their complex low-level details through to their higher-level application and performance across the business.

Experience

Quantitative Trader (Vice President), Program Trading (Equities), Credit Suisse

August 2009 - present

Within Program Trading I currently co-head Direct Risk Capital (DRC) group which is made up of 3 quant traders and 7 IT. DRC has the strategic goal to pull together the expertise of the Cash Sales/Trading desks, Program Trading / Delta One desks and CS's flag ship Algorithmic Execution Services (AES). The main projects I have been involved with are:

- Automation of the single stock risk flow (tickets 3% ADV, 3 mio USD) from Cash Traders and Sales Traders using AES algos for EURSTOXX 600. I developed the Norman (Neural Network) based model, which has been running for the last 2 years, improving efficiency of the cash risk business by 5.0 bps with a typical daily turnover of 30 mio USD.
- Migration of the core framework from the legacy Electronic Market Making (EMM) platform to the new Systematic Execution Framework (SEF) an integrated backtesting, paper and live trading environment, designed for hosting both market making models and systematic prop models. SEF's paper trade environment offers realistic (market data driven) simulations of AES suite of algos such as volume inline, vwap, sniper, twap, guerilla as well as the internal crossing mechanics.
- As SEF has gained momentum, various other business units such as Delta One ETF market making, South Africa Program Trading Desk and the Systematic Trading have been incorporated into DRC to try benefit from using this flexible and powerful common platform
- Internalisation, market making on the internal Smart Order Router (SOR) interacting with over 300 mio USD of flow daily, reducing execution costs and exchange fees by intelligent aggregation of risk crossing off flow internally.
- Development of FX intraday prop trading models around economic releases and Index Futures around expiry.
- Graduate recruitment, testament to the success of SEF, we now are opening up the platform and data to hand out to postgraduate students in various universities, the best performers are then brought into our internship program and then in as junior quants on the desk.

Quantitative Trader / Analyst (Vice President), Machine Learning Trading Systems (MLTS) Dresdner Kleinwort May 2008 – June 2009

The MLTS group was a small 4-person team that broke away from its parent STG (see previous job) with the objective to expand on the existing suite of machine learning technologies that I developed for trading G10 FX spot with trading time horizons ranging from 1 to 24 hours. We continuously automated almost every aspect of the system, computing a wide spectrum of market features derived from large volumes of tick data, in addition to our own economic event calendar harvested from Bloomberg. We developed a generic gridding framework for optimising all aspects of the system, from feature selection, parameter estimation to the trading logic itself. This technology dynamically handled distributions of the data and the classes needed for each Grid experiment, and successfully scaled to both Dresdner's global Grid (3000 CPUs) and our own high specification group of blade servers (300 CPUs). We used cutting-edge neuro-evolution techniques to effectively integrate neural networks to dynamically control various thresholds and parameters within our fully automated trading strategies.

Quantitative Developer/Trader (Vice President), Systematic Trading Group (STG), Dresdner Kleinwort Jan 2007 – May 2008

- STG was set-up to operate as an internal hedge fund within Dresdner. Its primary initiative was to implement a basket trading signal and demonstrate its application to G10 FX spot. I developed an integrated backtesting and live trading environment to enable rapid testing and deployment of new prop trading strategies.
- Developed and traded my own intra-day, trend-following G10 FX strategies, which used a unique combination of traditional machine learning algorithms (Neural and Bayesian Networks) with a Genetic Algorithm optimization wrapper.
- I played an integral role in developing all technologies (hardware and software) within the group, including:
 - Enabling Grid deployment of backtesting across Dresdner's internal Grid and our own blade servers
 - Bridging the connectivity to various top bank APIs for rapid electronic execution in FX trading
 - Creating GUIs for visualising signals and manually interacting with the automated trading systems
 - Creating a sophisticated, high throughput time-series database that was optimised for back-testing and recorded huge volumes of financial data which was easily manipulated using Java and Matlab

Quantitative Analyst (Associate), Quantitative Trading System Group, Dresdner Kleinwort June 2005 – Jan 2007

- Responsible for the design, co-ordination and implementation of a quantitative trading system to automate the hedging and pricing of client FX spot flow, scaling the existing business from 1 bio €/day to 2/3 bio €/day. The main hedging strategy used unique hybrids of portfolio delta-hedging methods with cutting edge machine learning techniques. This involved me project-managing several IT teams.
- To enable rapid testing and deployment of hedging and prop strategies, I created a detailed backtesting environment to analyse large volumes of data such as historical spot tick prices, client trades, pricing barriers and key economic events.
- I further developed wrappers around the backtesting environment to enable Grid deployment of experiments to explore very large parameter spaces and hence optimise the profitability of the strategies tested.
- I developed data clustering techniques (using KX database architecture) for automated client profile analysis for online feeds into the hedging, prop and pricing strategies.

Education

PhD Computer Learning, Royal Holloway University of London Sept 2002 – Feb 2007

BSc Computer Science and Mathematics, Royal Holloway University of London Sept 1999 – July 2002

Skills

Programming / Statistical: Extensive experience in C# and Java, MATLAB, Perl, Bash Shell, Reuters Kobra, Latex, C++, Pascal, JavaScript, HTML, PHP, XML, CSS, SQL and Prolog. Trained in SPSS, SAS, S-Plus and R.

IT: Windows XP/Vista, Mac OS X, Unix/Linux, Microsoft Office XP and 2007, Adobe Photoshop, Paint Shop Pro, Dreamweaver, Final Cut Pro, Visio.

Teaching: College Certificate in Teaching Skills in Higher Education (HEA accredited), Sept 2003.

Sports: Kickboxing (purple belt), Lau Gar kung-fu (green/blue sash), intermediate squash player

Other: Robotics design using LEGO Mindstorms, developing autonomous agents to play simulated football matches (RoboCup).

References available on request, my publications are listed on my website: <http://www.david-lindsay.co.uk/cv.html>