Michael Moreno
moreno_michael@yahoo.com

**Head of Research and Development**
**with extensive experience in Financial Markets**

Nationality: **French**
Language Skills: **English** (Fluent)

## PARTICULAR ABILITIES

- **Extensive Financial Market knowledge** with a proven track record of delivering the leading weather derivatives pricing system to the market for over 8 years.
- **Senior Quant developer and Software Architect** with extensive real time trading and analytic software development experience in the weather derivatives market (10 yrs) and before in the equity derivatives market (5 yrs). **Experienced with very large database** (>500GB).
- **Directorship** experience (9 yrs)

## WORK EXPERIENCE

**Aug 2000 – today: Head of research and development at Speedwell Weather Derivatives Ltd**

On a daily basis I am responsible for the research and development of the successful Speedwell Weather System (SWS), Speedwell Weather website, and our in house software for weather data cleaning, data verification, time series recalibration and weather forecast MOS downscaling which are key values for the weather and energy market. Our analytical and real time trading large system (over 2 M lines of code) is used by banks, insurance and energy players and is used by our new dynamic website. My daily work on the software development side consists in writing all the mathematical tools used in our various systems, including pricing, risk management, simulation engine, etc and writing / designing the front end screens, the application communication and database layers. I am also often involved in the design of the parent company N-tiers real time trading bond system. Finally, I have written key market connectivity components to integrate with ION, Soft solutions, BarChart and YJS and a few fixed income libraries (Yield calculations, curve fitting, NPV).

On the consulting side, I have analyzed over the years more than a hundred company revenues and structured highly tailored weather hedges under cost efficiency constraints and have designed and helped placing this year biggest European energy weather contingent deal in the market. I am always working very closely with clients and always look for improving our existing systems and new business opportunities with our clients and partners.

As a director of the company my role also partly consists in forward thinking and participating in taking strategic decisions.

**Key software achievements at Speedwell:**

- Delivered the leading weather derivative trading system that encompasses back, middle and front office functionalities
- Delivered according to our clients the fastest non downscaled weather forecast system.
- Delivered downscaled ensemble weather Forecast with great skills
- Leaded the development of large weather data cleaning and recalibrating systems. Speedwell has been elected several times the best weather data provider in the world
- Leaded the development of the Speedwell web applications that provide data, forecast, pricing and many other analytic tools
- Delivered web services that allows other website to send automatic firm prices for weather trades

**Other key achievements at Speedwell:**

- Helped the company grow significantly without external funding and while being profitable every year

- Kept our internal skills and technologies at the forefront moving from desktop applications written in VC++ 5, VB 6, Delphi 5 to mostly web delivered content written in ASP.Net
- Design and maintain our very large weather database that is the cornerstone of Speedwell's data and forecast businesses
- Helped placed large weather and energy cross weather hedges

**May 99 - Aug 00: Quant Consultant for BAREP (part of Société Générale Asset Management)**
Worked on pricing and managing Hedge Funds Options and Weather Derivatives + PhD studies.

**Apr 98 - May 99: Quant Consultant for AUREL-LEVEN (Crédit Commercial de France)**
Worked on pricing Convertible Bonds and Exotic Derivatives + Ph. D studies. Directly working with the Front Office, I have developed several libraries to price and hedge convertible bonds and exotic options (barriers, rainbow, quanto, etc) using PDE, trees and simulations methods used in Excel and integrated proprietary software.

**Oct 97 - Jan 00: Ph D in Mathematical Finance "Pricing & Hedging Exotic Options" + Lecturing.**

Apr - Sept 97: Practical training period at AUREL-LEVEN
Worked on "Pricing Contingent Claims Under Stochastic Interest Rates".

Oct 97 - Aug 02: Lecturer at the French Financial & Actuarial School ISFA mostly on computational finance, insurance and statistics at MBA level.

## KEY QUANTITATIVE SKILLS

Closed Form Solutions, Trees, Simulation (SDEs, Monte Carlo, Time Series and Copulas)
Statistics, Statistical Tests, Probability, MLE and distribution best fit technique
Robust univariate and multivariate Regressions, curve fitting and smoothing
Daily and Expiry VaR for non linear portfolios
Weather data recalibration, probabilistic weather ensemble forecasting

## COMPUTING SKILLS

**13 years experience of commercial software development.**

Extensive experience in writing Front and Middle Office Client/Server and Multi-Tiers systems with enhanced pricing, VaR and simulations engines as well as more simple ad hoc "Excel spreadsheets".

I currently undertake all new development in C# (WinForm and ASP.Net) while we maintain older applications in Delphi, VB and a few components in C++.

**Languages:** C# (6 years), Delphi (win32, 14 yrs), VB6 (10 yrs), VBA, VC++ 6 (1yr - rusty), SQL and TSQL

**Technologies:** Win32, WinForms, ASP.Net, COM, DCOM, ActiveX, .Net Framework, ADO, ADO.Net, MSMQ,.Net Remoting, Client server, Multi-threading, N-Tiers architecture

**Database:** SQL Server - experience with very large database maintenance, design and speed tuning

**Other:** Design Patterns, Unit testing with NUnit, InstallShield, SourceSafe, Visio, Agile FDD developing, DevExpress Components and Grids, Steema TChart

## EDUCATION

Oct 97 to Jan 00 **Ph. D in Mathematical Finance** "Exotic Options on Shares and Optional Strategies", university Claude Bernard Lyon 1.
Committee: J-C. Augros, J-P. Laurent, P. Poncet, J-L. Prigent, M. Quéruel, F. Quittard-Pinon
96-97 DEA in **Financial & Actuarial Studies**, university Claude Bernard, Lyon.
92-96 DEUG, Bsc and Msc in **Applied Mathematics studies**, university St Jerome, Marseille.

## RESEARCH ACTIVITIES AND PUBLISHED PAPERS

I have co written 2 books and a few research articles on weather and equity derivatives. Most papers can be downloaded from http://michael.moreno.free.fr/