# Jean-Marc MERCIER

**Address:** 196 rue Saint Maur, 75010 Paris France.
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## EDUCATION: Ph-D, Applied Mathematics.

## SPECIALTIES: Finance – Information systems – Mathematics.

- **FINANCE:** Equity derivatives (6 years experience), Financial modelling (8y), Sophis Risque (6y).
- **INFORMATION SYSTEMS:** C++ (8y), business analysis (3y), algorithms and systems (16 y), data hosting / cloud computing (1y).
- **MATHEMATICS**: partial differential equations (16y), financial mathematics, (8y), numerical analysis (16y).

## EXPERIENCE: Entrepreneur – Consultant – Engineer – Researcher -Teacher.

Jul. 2005-- **C.E.O. CRIMERE S.A.R.L.**
Mar. 2009--**CHAIRMAN. N.P.O MNEMOSINE**.

Crimere is a very small young innovative French company, that I created in jul. 2005, dedicated to host my research activities and a small consultancy business. Mnemosine is a young Non Profit Organisation that I created for the Mnemosine project.

- Optimally transported schemes. An innovative and performing numerical analysis technique, having potential industrial applications in finance, metrology, spatial, architecture... In partnership with the French research structure CNRS (Laboratoire J.L.Lions). Funded by OSEO. Code and research papers in open access.
- Economical crisis risk. A research project that proposes an approach to quantify the economical risk crisis. Code and research papers in open access.
- MNEMOSINE. A data hosting / cloud computing ethical project dedicated to individuals. It consists in a juridical structure that combines non profit organisations and corporates, together with an information system, to propose a reasonable framework allowing tackling the constitution, preservation and transmission of the digital patrimony of individuals. In partnership with SUN Microsystem.

**Apr. 04-Dec 06. Natixis.** Front to Back Business Analyst.

This consultancy activity as a business analyst for the Equity Derivative trading desk was based over my knowledge of Sophis Risque software.

- Jan 06 - Dec 06. **Front Business Analyst**. Equity Derivative dpt. Resp: G. Thouvenel.
  **Deal netting.** Export of aggregated deal from the Front Sophis *Risque* Database to the NBP transversal


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cash action back office software KTP, with impact on accounting, reconciliation, and settlement system. ● **Sophis *Risque* major version upgrade.** Upgrade from Sophis Risque 4.5.1 to 5.1.3, with installation of the back office and Loan and Repo modules. ● **Information system de-merging.** Resulting from the de-merging of Equity Derivative activities and FSM (Transversal NBP Market activities). ● **Information system merging.** Resulting from the merging of activities between EQD and Natexis Arbitrage (an equity derivative business subsidiary of Natexis). ● **Electronic market for future.** Front to Back installation of GL Platform for electronic activities on future markets. ● **Specification of the EQD Derivative Value at Risk** (unattended project

- Déc. 04 - Déc 05. **Front Business Analyst.** Equity Derivative department. Resp. O. Lefrere, S. Millin
  **Electronic market for cash action.** Installation of the Front part of an EMS-SLIB Platform using EQD EURONEXT Direct Market Access._ ● **Grid computing.** Starting the grid computing activity for Natexis group: benchmarking and qualification of a grid software for the equity derivative pricing library. ● **Sophis *Risque* Database purge project**, using a general graph analyzer tool. ● **Database access securing instrument workflow**, a tool to secure instruments modifications using a workflow.

- Apr 04 - Oct 04. **Front Business Analyst.** Ixis / Equity Derivative department.
  Client contribution ● stress test scenarios ● P&L explanation ● GL to Sophis ● Trade integration ● rate curves import ● pricing methods.

Mar 01-Nov 03**. Research Engineer. Sophis technology.**

Research and development activity for the Sophis Risque pricing library, based over my knowledge over Partial Differential Equations and numerical analysis.

**P.D.E. solver.** Specification, design and implementation of a P.D.E. solver engine using an advanced numerical schemes (link) for exotic equity pricing. ● **Credit risk.**1st specification of the credit risk module (intensity Poisson law based calibrated through Credit Default Swap Market). ● **Monte-Carlo.** Architecture and optimisation of Monte-Carlo methods (C++ template programming). ● **Value at Risk.** Specification and implementation of a scenario engine for Credit Lyonnais..

**Researcher. European community (TMR Networks).** Dec 96-Oct 00**.**

Post doctoral fellowships in Applied mathematics, hosted by the European research networks. Research fields: « Hyperbolic conservation laws ».

- **Ecole Polytechnique, Paris, France.** Mar 00 – Oct 00.
- **Universittà di Salerno, Italy.** Sept 99 - Fev 00.
- **Universidad del Pays Vasco, Bilbao, Spain -** Sept 98 - Sept 99.
- **SISSA (Institut for the Studies and Advanced Research), Trieste, Italy.** Sept 97 - Fev 98.
- **Universittà di Pisa, Italy -** Dec 96 - Sept 97.


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## Researcher Ph-D. Universite Bordeaux I. Dec. 96-Oct 00.

Ph-D in applied mathematics. Research field: « Big Bang » theory, quantum gravitation.

**Thesis title : "**Semi linear systems of wave equations **". Thesis supervisor**: B. Hanouzet.

## Teaching.

- **Universittà di Napoli, Italy** post doctoral course. Fev 2000.
- **Université Bordeaux I. France.** Teaching assistant. Sep 93 - Sep 96.

## Conferences & Publications.

- **Conferences:** Ecole Polytechnique, Mars 2002, Ecole Nationale des ponts et chaussées, Jan 2002, Ecole Nationale Supérieure d'Ulm, Sept 2000, Institut Henri Poincaré, Dec 1999, …
- **17 publications / work in progress.**

## Language: French, English, Italian, Spanish. A few German.