CURRICULUM VITÆ (December 2014)

Personal information

Julien Guyon
Birth date: May 3rd, 1977
Nationality: French
Currently: Senior Quant at Bloomberg L.P. (New York) and Adjunct Professor at Columbia University

Work:
Bloomberg L.P., Quantitative Research
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Professional experience

Since 2014	**Adjunct Professor in the Department of Mathematics at Columbia University, New York**
Since 2012	**"Quant" (quantitative researcher) in the Quantitative Research group at Bloomberg L.P., New York** Path-dependent volatility models: dynamics, smile calibration; Stochastic local volatility (SLV) models: impact of spot-vol correlation; Local correlation models: affine transform method; Analysis of historical spot-vol dynamics; Local volatility (LV) + stochastic rates: Malliavin disintegration by parts; CVA: nested Monte Carlo (MC) and marked branching diffusions
2009–2012	**"Quant" in the Global Markets Quantitative Research team at Société Générale, Paris** Particle Method: MC calibration of many models to market smiles; Stochastic volatility (SV) models: derivation of the smile in general multi-factor stochastic volatility models at order 2 in vol-of-vol; New extrapolation of the smile of interest rate swaptions; New global parameterization of the FX smiles; Daily update of the long term (illiquid) FX smile; Pricing cross FX options with uncertain correlation; From spot volatilities to implied volatilities
2011–2012	**Visiting Professor at Université Paris VII** (Professeur Associé Service Temporaire)
2006–2009	**"Quant" in the Equity Derivatives Quantitative Research team at Société Générale, Paris** New MC methods for pricing in the Uncertain Volatility Model; New pricing model of reinsurance deals (GMxB, variable annuities); Time extrapolations for numerical schemes for SDEs (Richardson-Romberg); MC pricing of American and chooser options: lower and upper bounds
2001–2002	**Crédit Lyonnais (now CACIB), Interest Rates Derivatives Quantitative Research (Paris) and Equity Derivatives Quantitative Research (London)** One-year training period. Theorical and numerical study of stochastic volatility models.

Education

2003–2006 • **PhD in Probability Theory and Statistics at the CERMICS (Ecole des ponts ParisTech, Paris)**
Supervisor: Jean-François Delmas.
Received with highest honors (mention très honorable avec félicitations du jury).
Published by LAP Lambert Academic Publishing (ISBN: 9783838314464, 172 pages).
Awarded Best 2006 PhD Thesis of Ecole des ponts ParisTech.

« Probabilistic Modeling in Finance and Biology. Limit Theorems and Applications »

EXAMINING COMMITTEE:

Jean-François Delmas	PhD advisor	(Ecole des ponts ParisTech)
Nicole El Karoui	President	(Ecole polytechnique)
Bernard Lapeyre	Examiner	(Ecole des ponts ParisTech)
Sylvie Méléard	Referee	(Université de Nanterre – Paris X)
Philip Protter	Referee	(Cornell University)
Bernard Prum	Examiner	(Université d'Evry)

2002–2003 • **Master of Probability Theory, Université Paris VI.** Received with highest honors (mention très bien).

2000–2003 • **Ecole des ponts ParisTech (Paris).** Corps des ponts et chaussées. [Probability Theory, Finance and numerics, Computer science, Mechanics]

Spring 2000 • **Ecole normale supérieure (Paris), Department of Computer Science.** Research project under the supervision of François Baccelli, probabilities applied to the calculus of internet outputs. [Markov chains]

1997–2000 • **Ecole polytechnique (Paris),** Final ranking: 55th/400. [Mathematics, Physics, Economics]

Teaching

Columbia University, Department of Mathematics: Adjunct Professor
Nonlinear Option Pricing, Professor, since 2014, MAFN (Mathematics of Finance MA program), 35h/year, 20 students.

Université Paris VII: Visiting Professor (Professeur Associé Service Temporaire)
Financial Instruments and Models, Professor, 2011–2012, Master2 M2MO (Modélisation aléatoire), 48h/year, 50 students.

Ecole des ponts ParisTech (Paris)
Mathematics of Finance, Professor, 2008–2012, 21h/year, 70 students.
Probability and Statistics, Professor, 2004–2006.
Statistics and Data Analysis, Professor, 2005–2006.
Mathematics of Finance, Assistant Professor, 2004–2006.

Ecole nationale supérieure de techniques avancées (ENSTA, Paris)
Introduction to Probability and Statistics, Assistant Professor, 2003–2006.

Lycées Louis-Le-Grand and Henri IV (Paris)
Mathematics, Examiner in mathematics in the "Classes Préparatoires aux Grandes Ecoles", 1998–2004.

Books

[1] 2013 **Guyon, J. and Henry-Labordère, P.** *Nonlinear Option Pricing.* Chapman & Hall/CRC Financial Mathematics Series (ISBN 9781466570337, 445 pages). First monograph on numerical methods for solving high-dimensional nonlinear problems arising in option pricing.

[2] 2009 **Guyon, J.** *Probabilistic modeling in Finance and Biology. Limit Theorems and Applications.* LAP Lambert Academic Publishing, 2009 (ISBN: 9783838314464, 172 pages). PhD dissertation.

[3] 1998 **Guyon J.** *Les clés du problème.* Ellipses, Paris, 1998 (ISBN: 2-7298-6836-4, 218 pages). Mathematics book for the "classes préparatoires" students preparing the Grandes Ecoles entrance exams.

Articles published in peer-reviewed journals

[1] 2014 **Guyon, J.** *Rethinking the FIFA World Cup final draw.* Submitted.

[2] 2014 **Guyon, J.** *Path-dependent volatility.* Risk Magazine, October.

[3] 2014 **Guyon, J.** *Local correlation families.* Risk Magazine, February.

[4] 2012 **Bergomi, L. and Guyon, J.** *The smile in stochastic volatility models.* Risk Magazine, May.

[5] 2012 **Guyon, J. and Henry-Labordère, P.** *Being particular at calibration.* Risk Magazine, January.

[6] 2011 **Guyon, J. and Henry-Labordère, P.** *From spot volatilities to implied volatilities.* Risk Magazine, June.

[7] 2011 **Guyon, J. and Henry-Labordère, P.** *Uncertain volatility model: a Monte-Carlo approach.* Journal of Computational Finance **14**(3).

[8] 2007 **Guyon, J.** *Limit theorems for bifurcating Markov chains. Application to the detection of cellular aging.* Annals of Applied Probability, **24**(5,6), 1538–1569.

[9] 2006 **Guyon, J.** *Euler scheme and tempered distributions.* Stochastic Processes and their Applications **13**(6), 877–904.

Proceedings

[1] 2005 **Guyon, J., Bize, A., Paul, G., Stewart, E., Delmas, J.-F. and Taddéi F.** *Statistical Study of Cellular Aging.* ESAIM Proceedings, CEMRACS 2004 - Math. and appl. to Biology and Medicine, **55**, 100–114.

Lecture notes chapters

[1] 2003 **Guyon, J.** *Wrote the chapter on "Stochastic Volatility" for the lecture notes "Stochastic Models in Finance" by Nicole El Karoui* Master of Probability and Finance, Université Paris VI.
Available online at `http://www.cmap.polytechnique.fr/~elkaroui/masterfin034.pdf`.

Op-eds and articles for a non-specialist readership

[1] 2014 **Guyon, J.** *The World Cup Draw Is Unfair. Here's a Better Way.* The New York Times, June 4, 2014. Available online at `http://www.nytimes.com/2014/06/05/upshot/the-world-cup-draw-is-unfair-heres-a-better-way.html`.

[2] 2014 **Guyon, J.** *La FIFA doit aussi revoir le tirage au sort de sa Coupe du monde.* Le Monde, June 4, 2014. Available online at `http://www.lemonde.fr/coupe-du-monde/article/2014/06/04/il-faut-repenser-le-tirage-au-sort-de-la-coupe-du-monde_4431571_1616627.html`.

[3] 2014 **Guyon, J.** *Repenser le tirage au sort de la Coupe du monde.* So Foot, June 4, 2014. Available online at `http://www.sofoot.com/repenser-le-tirage-au-sort-de-la-coupe-du-monde-184552.html`.

[4] 2014 **Guyon, J.** *A Better Way to Rank Soccer Teams in a Fairer World Cup.* The New York Times, June 13, 2014. Available online at `http://www.nytimes.com/2014/06/14/upshot/a-better-way-to-rank-soccer-teams-in-a-fairer-world-cup.html`.

[5] 2014 **Guyon, J.** *El sistema del sorteo de grupos del Mundial es injusto. Cambiémoslo.* El País, June 16, 2014. Available online at `http://deportes.elpais.com/deportes/2014/06/16/mundial_futbol/1402910833_667906.html`.

[6] 2011 **Guyon, J.** *Le smile dans les modèles à volatilité stochastique.* Les cahiers de l'Institut Louis Bachelier, n°3, Numéro spécial : mieux comprendre la recherche en finance, July 2011.

Talks in conferences, congresses, workshops as invited speaker

2015
- **Global Derivatives Trading and Risk Management 2015** *Amsterdam* (May)

2014
- **Research In Options 2014 Conference (RIO2014)** *IMPA, Rio de Janeiro* (December)
- **Global Derivatives Trading and Risk Management USA 2014** *Chicago* (November)
- **5th International Conference on Mathematics in Finance** *Kruger National Park, South Africa* (August)
- **8th World Congress of the Bachelier Finance Society** *Brussels* (June)
- **Global Derivatives Trading and Risk Management 2014** *Amsterdam* (May)
- **New Trends in Computational Finance and Related Topics** *ICMS, Edinburgh* (April)
- **Advances in Financial Mathematics** *International conference organized in Paris in the framework of the chair "Financial Risks" (Ecole polytechnique - Ecole des ponts - Université Paris VI - Société Générale) of the Risk Foundation* (January)

2013
- **Research In Options 2013 Conference (RIO2013)** *IMPA, Rio de Janeiro* (December)
- **Global Derivatives Trading and Risk Management 2013** *Amsterdam* (April)

2012
- **Research In Options 2012 Conference (RIO2012)** *IMPA, Rio de Janeiro* (December)
- **Global Derivatives Trading and Risk Management USA 2012** *Chicago* (November)
- **Global Derivatives Trading and Risk Management 2012** *Barcelona* (April)
- **The Interest Rate Conference, WBS** *London* (March)
- **Conference on Quantitative and Statistical Finance** *Université Paris VII* (March)

2011
- **Research In Options 2011 Conference (RIO2011)** *IMPA, Rio de Janeiro* (November)
- **Global Derivatives Trading and Risk Management 2011** *Paris* (April)
- **Modelling and Managing Financial Risks** *International conference organized in Paris in the framework of the chair "Financial Risks" (Ecole polytechnique - Ecole des ponts - Société Générale) of the Risk Foundation* (January)

2010
- **Research In Options 2010 Conference (RIO2010)** *IMPA, Rio de Janeiro* (November)

2009
- **Research In Options 2009 Conference (RIO2009)** *IMPA, Rio de Janeiro* (November)

2008
- **"Journées MAS" of the SMAI** *Université de Rennes 1* (August)

2006
- **Workshop on Mathematical Finance** *Kyoto University* (August)
- **31st Conference on Stochastic Processes and their Applications (SPA2006)** *Université Paris V* (July)
- **Journées de Statistique** *EDF, Paris* (May)

- **Amamef International Conference on Numerical Methods in Finance** *INRIA Rocquencourt* (February)
- **VIIth Workshop on Quantitative Finance** *Università degli Studi, Perugia* (January)

2005
- **Quantitative Methods in Finance Conference (QMF2005)** *University of Technology, Sydney* (December)
- **Journées de probabilités, September 2005.** *Institut Elie Cartan, Nancy* (September)

Talks in seminars

2015
- **Columbia Mathematical Finance Seminar** *Columbia University* (February)
- **Practitioners' Seminar of the Mathematics of Finance MA Program** *Columbia University* (January)

2014
- **Seminar of the Electrical Engineering Department** *PUC, Rio de Janeiro* (December)
- **BBQ (Bloomberg Quant Seminar)** *Bloomberg headquarters, New York* (September)

2013
- **Seminar of the Electrical Engineering Department** *PUC, Rio de Janeiro* (December)
- **Electronic Trading Group Seminar** *KCG (Knight Capital–Getco), Jersey City* (November)
- **Mathematical Finance and Probability Seminar** *Rutgers University* (October)
- **IAFE-Thalesians Seminar** *New York University* (September)
- **Global modeler's meeting** *Morgan Stanley headquarters, New York* (July)
- **BBQ (Bloomberg Quant Seminar)** *Bloomberg headquarters, New York* (June)
- **Quantitative Finance Seminar** *The Fields Institute for Research in Mathematical Sciences, Toronto* (February)

2012
- **Mathematics of Finance Seminar** *Université de Marne-la-Vallée* (May)

2011
- **"Mathematical Finance, Numerical Probability and Statistics of processes" Seminar** *Université Paris VII* (October)
- **Mathematics of Finance Seminar** *Université de Marne-la-Vallée* (May)

2010
- **Mathematics of Finance Seminar** *Université de Marne-la-Vallée* (January)

2009
- **MASEF Seminar** *Université Paris-Dauphine* (November)
- **Seminar of the chair "Financial Risks" (Ecole polytechnique - Ecole des ponts - Société Générale) of the Risk Foundation** *Palais Brogniart, Paris* (September)
- **Seminar on Complex Systems** *Ecole des ponts ParisTech, Paris* (September)

2008
- **Seminar of Stochastic Calculus and Finance** *Ecole polytechnique, Paris* (April)

2005
- **HSBC Capital Markets Research** *Paris* (November)
- **Seminar of Probability Theory, Statistics and Biology** *Université Paris V* (October)
- **OMEGA Seminar** *INRIA Sophia-Antipolis* (September)
- **Bachelier Seminar, June 2005.** *Institut Henri Poincaré* (June)
- **Seminar of Numerical Probability, Statistics of processes and Finance** *Université Paris VI* (April)
- **Mathematics of Finance Seminar** *Université de Marne-la-Vallée* (February)

2002
- **Mathematics of Finance Seminar** *INRIA Rocquencourt* (November)

Scientific animation, representation

- **Member of the chair "Financial Risks" (Ecole polytechnique - Ecole des ponts - Société Générale) of the Risk Foundation** (2006-2012)
- **Member of the local organization committee of the conference "Modelling and managing financial risks"** This international conference was co-organized by Ecole polytechnique, Ecole des Ponts and Société Générale in the framework of the chair "Financial Risks" of the Risk Foundation (Paris, January 2011)
- **Ecole des ponts ParisTech student representative on the Teaching and Research Council** (2001)
- **Ecole polytechnique student representative in the Mathematics Department** (1999)

Referee activity

- Mathematical Finance
- Journal of Statistical Planning and Inference
- Journal of Computational Finance
- Risk Magazine
- SIAM Journal on Financial Mathematics
- International Journal of Theoretical and Applied Finance

Other experience

2003–2012	**DJing** In several bars of Paris (Pop In, Politburo, La Jaja).
Fall 2000	**National planning agency (DDE 95, Cergy-Pontoise)** On temporary assignment to the Sanitation and Networks Agency Head.
Summer 1999	**Humanitarian project (Bolivia)** Creation of a potable water system in a quechua community in the Altiplano.
1997–1998	**French national military service. Lieutenant.** Civil service in a technical and professional school. Supervision and remedial courses to disadvantaged children.

Languages

French mother tongue, **English** fluent, **Spanish** fluent, **Italian** notions.

Computer skills

Operating systems: Unix, Windows, Mac

Programming: C, C++, VBA, Matlab, Scilab, Python