Curriculum Vitae

Camilo Andrés GARCÍA TRILLOS
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Current Position

September 2013 – **Research and teaching fellow**
Nice (Fr) *Université Nice Sophia Antipolis*

Education

2010 –2013 **PhD in Mathematics**
Nice (Fr) *Laboratoire J.A. Dieudonné, Université Nice Sophia Antipolis*
Thesis supervised by François Delarue. *" Probabilistic numerical methods: multi-scale and mean-field problems". Defended on December 12th 2013.*

2008–2010 **Master-MATHMODS, *Mathematical modeling in engineering***
Nice (Fr) *Università degli studi dell'Aquila, Université Nice Sophia Antipolis*
- Master thesis supervised by François Delarue: *" Ergodic Diffusions and Applications in Optimal Ergodic Control"*
- Three months research internship at Inria (Sophia Antipolis) on a numerical study of a modification of the Black-Scholes equation.

2000–2005 **B.Sc. Mathematics**
Bogotá (Col) *Universidad de los Andes*
Undergraduate thesis on coloring properties of Kneser graphs.
Graduated "cum Laude".

1999–2004 **B.Sc. Engineering**
Bogotá (Col) *Universidad de los Andes*
Undergraduate thesis on robust algorithm for edge recognition in 2d images.
Graduated "Magna cum Laude".

Research

Domaine: Numerical methods, stochastic analysis, financial mathematics.

Keywords: Numerical methods; multi-scale systems, strongly oscillating systems, McKean Vlasov equations, BSDEs, cubature, recombination

Scientific papers

Accepted in refereed journals

- *A decreasing step method for strongly oscillating stochastic models.*
  To appear in Annals of Applied Probability. Available on HAL: `http://hal.archives-ouvertes.fr/hal-00740604`.
- *A cubature based algorithm to solve McKean-Vlasov decoupled forward-backward stochastic differential equations*
  with P.E. Chaudru de Raynal. Accepted under minor revisions in Stochastic Processes and their Applications. Available at HAL: `http://hal.archives-ouvertes.fr/hal-00847789`.

Technical reports

- *Maths and Companies Study Week (SEME in French): Islanding detection in an electrical network.*
  with Amblard, Z., Benki, A., Ta, T. N. N. et Truong, T. T. P. (2013). Available at HAL: `http://hal.archives-ouvertes.fr/hal-00957592`.

Presentations

Talks

2014
- *"Solution numérique d'une équation différentielle stochastique rétrograde du type McKean-Vlasov"*. Seminaire: Finance mathématique, probabilités numériques et statistique des processus. *UPMC (Paris VI University) - LPMA - MathFiProNum Team.* 16 January, Paris, France.

2013
- *"Solution numérique d'une équation différentielle stochastique rétrograde du type McKean-Vlasov."*. TOSCA team seminar. *Inria.* September 5th, Sophia Antipolis, France.
- *" Numerical Solution of MV-FBSDEs Using a Recombined Cubature Method "*. Stochastic analysis seminar. *Oxford Man Institute of Quantitative Finance.* February 11th, Oxford, England.

2012
- *" Numeric approximation of a two-scale SDE "*. 10th colloquium of young probabilist and statisticians. *CIRM.* April 16th-20th, Marseille, France.

2010
- *" Ergodicity and applications in control "*. Thésarderie (PhD student's seminar). *ADSFA.* October 19th, Nice, France.

Posters

2010
- PhD student annual meeting. *Université Nice Sophia Antipolis*, May 5th, Nice, France.

Attended conferences

2011
- Fourth European summer school in financial mathematics *ETH Zurich*. September, Zurich, Swiss.

2010
- Quantitative Behavioral Finance *Université Nice Sophia Antipolis*. December, Nice, France.
- Analysis and Probability in Nice *Université Nice Sophia Antipolis*. November, Nice, France.

2009
- Robust methods and algorithms for solving large algebraic systems on modern high performance computing systems *INRIA*. March, Sophia Antipolis, France.

Academic invitations

2013
- *Oxford Man Institute of Quantitative Finance*. March, Oxford, England.
- *Imperial College*. January, London, England.

Teaching

2013-2014 Tutorial class Probability I (40h)
Nice (Fr) Université Nice Sophia Antipolis
Main topics: counting, definition of random variable, probability law (discrete and continuous), probability density, expectation, variance.

2013-2014 Tutorial class Probability and economic observation (45h)
Nice (Fr) Université Nice Sophia Antipolis
Main topics: basic notions in statistics, usual distributions (Gaussian, t-Student, Chi 2), statistical estimation using the moments method, confidence intervals, CLT.

2004-2005 Calculus II (75h)
Bogotá (Col) Universidad de los Andes
In charge of the Calculus II lecture. Main subjects: Series: convergence and convergence criteria. Integration: definition, integration techniques, applications.

2003-2004 Tutorial class Calculus III (30h)
Bogotá (Col) Universidad de los Andes
Main topics: parametric curves ordinary differential equations.

2002-2003 Tutorial class Signal theory (60h)
Bogotá (Col) Universidad de los Andes
Main topics: Fourier transform, convolution, Laplace transform, sampling, filtering.

2001-2002 Tutorial class Introduction to programming (C) (60h)
Bogotá (Col) Universidad de los Andes
Main topics: basic algorithmics notions, sequential programming.

Professional experience

2006–2008 **Head of Risk Department**
Bogotá (Col) *FNG S.A.*
I was in charge of coordinating the risk control process (market, operational and credit risk) of FNG, a Colombian financial company whose main activity is to issue guarantees for SMEs. I actively participated on the validation of mathematical models for financial risks, on the generation of quality indicators, and on defining risk mitigation policies.

2005–2006 **Mathematician at the Risk department**
Bogotá (Col) *FNG S.A.*
I was in charge of proposing and validating mathematical tools for quantifying the risk associated with issuing guarantees.

January-June 2005 **Mathematician at Valuation department**
Bogotá (Col) *BVC S.A. (Colombian Stock Exchange)*
I was in charge of a numerical study on a new method for estimating the term structure of interest rates curves.

Computer skills

Programming languages: C, C++, Python, Fortran, Matlab.

Office suites: Office, LaTeX.

Statistics: R, SAS.

Databases: SQL.

Internet: HTML.

Language skills

Spanish: Native speaker.

English: Proficient

French: Proficient.

Italian: Elementary level user.