

Irina Goia

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EDUCATION

Columbia University, New York, N.Y. 2002-2009
• *Doctor of Philosophy in Mathematics.* May 2009
• *Master of Philosophy in Mathematics.* May 2006

Areas of Research: Applied Probability, Mathematical Finance, Stochastic Portfolio Theory.

Relevant Coursework: Stochastic Differential Equations, Advanced Probability, Advanced Measure Theory, Partial Differential Equations.

Selected Conferences: The Mathematics of Defaultable Securities (Princeton, 2008), Liquidity Risk (Cornell, 2008), American Finance Association annual meeting (Atlanta, 2010), Global Forex Traders (New York, 2010).

Massachusetts Institute of Technology, Boston, MA 1998-2002

- *Bachelor of Science in Mathematics.*
- *Humanities Concentration in French Language and Culture.*

Relevant Coursework: Introduction to Algorithms, Computation Structures, Finance Theory.

Risk Theory and Related Topics - EMS School, Bedlewo, Poland Oct 2008

Topics included Mathematical Credit Risk, Extreme Value Theory, Risk Sensitive Portfolio Optimization.

HONORS AND AWARDS

- Faculty Fellowship, Columbia University. 2002-2009
- International Mathematics Competition for University Students: Second Prize. London, July 2000
- National Mathematics Olympiad of Romania: First Prize. 1993-1997
- International Mathematics Competition: Second Prize. Yakutia, Russia, July 1997

PROJECT EXPERIENCE

Columbia University, New York, N.Y. 2005-2008
“Bessel Processes and Volatility Stabilized Markets”

- Computed explicitly the distributions of stock prices and market weights in the volatility stabilized market model. Proved that vector of market weights is a Jacobi diffusion and studied its moments and invariant distribution. Identified and corrected error in a journal published article on Cox-Ingersoll-Ross processes.

University of Minnesota, Duluth, MN 1999

- Conducted independent research in graph theory as part of the Research Experience for Undergraduates (REU) program. Improved existing results on cyclable graphs. Authored original paper. Presented results at the American Mathematical Society annual meeting.

TEACHING EXPERIENCE

Columbia University, New York, N.Y. 2005-2008
Instructor

- Instructed College Algebra and Calculus classes to a small audience of undergraduate students. Lectured, designed syllabus and exams, held office hours and graded assignments.

Teaching Assistant 2003-2005

- Assisted faculty with Master’s level course Introduction to the Mathematics of Finance. Topics included Black-Scholes model, bonds, portfolio optimization, elementary stochastic calculus.

Presenter 2003-2009

- Lectured to an audience consisting of faculty and graduate students on advanced topics, including the law of the integral of geometric Brownian motion, the Föllmer-Protter-Shiryaev generalization of Itô’s Formula and the Hamilton-Jacobi-Bellman equations.

Private Tutor 2009

- Helped clients with Stochastics, Statistics, Real Analysis, Math Finance and Calculus coursework.

SKILLS

- **Computers:** Basic programming experience in C++, Scheme, HTML, Mathematica; Linux user.
- **Languages:** Fluent in French, Italian and Romanian. Working knowledge of German and Spanish.
- **Outdoors:** Experienced rock, ice and alpine climber.