Pierre-O. Goffard

Post-Doc in applied mathematics

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27 years old

Professional experience

Since November 2015 — **Post-Doctoral fellow**, *Université Libre de Bruxelles*, Brussels, Belgium.

Aug.-November 2015 — **Post-Doctoral fellow**, *Aarhus university*, Aarhus, Denmark.

2011–2015 — **Ph.D. Student and junior actuary**, *Aix-Marseille university and AXA France (french partnership named convention CIFRE)*, Marseille, France.

April - September 2011 — **Project Manager (intern)**, *AXA France*, Marseille, France.
- Optimization of the aggregation procedure of the AXA France life insurance portfolio of savings contracts.

May - July 2010 — **Project Manager Assistant (intern)**, *IFREMER*, Brest, France.
- Development of composite indicators to help decision making

July - August 2009 — **Marketing Assistant (intern)**, *Crédit Mutuel de Bretagne*, Brest, France.
- Various activities (computer science and basic statistical analysis)

Education

Since 2014 — **Master of science (M.Sc.)**, *ISFA*, Lyon, France.
- Major: Financial and actuarial sciences
- French actuary diploma (correspondence courses)

2011–2015 — **Ph.D. in applied mathematics**, *Aix-Marseille University and AXA France (french partnership named convention CIFRE)*, Marseille, France.
Polynomial approximations of probability density function and applications to insurance.
Advisors: Denys Pommeret and Stephane Loisel.

2008–2011 — **Master of Science (M. Sc.)**, *ENSAI*, Rennes, France.
- Major: Advanced Statistical Engineering
- Additional training (during the 3^{rd} year, 2010-2011): Master of statistics and econometrics at the *University of Rennes 1*, focused on scientific research, in tandem with ENSAI engineering degree

2006–2008 — **Classes Préparatoires**, *Dupuy de Lôme High School*, Lorient, *MP*.
2 years of intensive training in Math, Physics and Chemistry.

Skills

Technical — Probability and statistics for finance and insurance (or anything else)

IT — R Studio, SAS, Mathematica, Matlab, Java, HTML, CSS, Ruby, Markdown, $Latex$

Languages — French *(mother tongue)*, English *(full professional proficiency)*, Spanish *(notions)*

Research Expertise

Numerical inversion of Laplace transform, *I work out a numerical method to recover probability density function from the knowledge of their Laplace transform. The desired PDF takes the form of a polynomial expansion. The method extends naturally within a multi-dimensional context and the approximation formula can turn into a nonparametric statistical estimator of the PDF when data are available .*

Ruin theory, *In ruin theory, we model the financial reserves of a non life insurance company using stocastic processes. We aim at computing the probability that the financial reserves falls below 0. This quantity, aka probability of ruin, is tricky to capture and motivates the use of numerical methods such as those involving Laplace transform inversion.*

Teaching experience

2012–2014 **Teaching assistant**, *Aix-Marseille University*, Marseille, France.
Master in actuarial science
- Introduction to ruin theory (graduate class, 6h)

2013–2014 **Teaching assistant**, *ENSAI*, Rennes, France.
Master in statistical engineering
- Introduction to ruin theory (graduate class, 6h)

2012–2013 **Teaching assistant**, *Aix-Marseille University*, Marseille, France.
Bachelor of mathematics applied to social science
- Advanced probability and statistics (undergraduate class, 30h)

2011–2012 **Teaching assistant**, *Aix-Marseille University*, Marseille, France.
Bachelor of Biology
- Introduction to statistical analysis (undergraduate class, 30h)

Publications

Accepted/Published

2015 **P.O. Goffard & Xavier Guerrault**, *Is it optimal to group policyholders by age, gender, and seniority for BEL computations based on model points?*, European Actuarial Journal.

2015 **P.O. Goffard, Stephane Loisel & Denys Pommeret**, *A polynomial expansion to approximate the ultimate ruin probability in the compound Poisson ruin model*, Journal of Computational and Applied Mathematics.

2015 **P.O. Goffard, Stephane Loisel & Denys Pommeret**, *Polynomial approximations for bivariate aggregate claims amount probability distributions*, Methodology and Computing in Applied Probability.

Submitted/under revision

Selected communications

UK 2015 **CASS Business School Seminar**, *London*.

Denmark 2015 **Thiele Seminar**, *Aarhus*.

France 2015 **Université d'été de l'institut des actuaires**, *Brest*.

France 2015 **PhD Thesis oral defense**, *Marseille*.

UK 2015 19^{th} **International Congress on insurance, mathematics, and economics**, *Liverpool*.

France 2014 $46^{ème}$ **journées de statistique**, *Rennes*.

Germany 2013 **Conference on Advances in Financial and Insurance Risk Manangement**, *Munich*.

France 2013 $5^{ème}$ **Rencontre des Jeunes Statisticiens**, *Aussois*.

France 2013 $45^{ème}$ **journées de statistique**, *Toulouse*.

Switzerland 2013 **Perspective on Actuarial Risks in Talks of Young Researchers**, *Ascona*.

Refereing activities

Methodology and Computing in Applied Probability , *MCAP*.

Hobbies

Music Campfire guitar player

Sports Surf, windsurf, soccer