Antoine Kornprobst

Phone: 347 826 6290

Email: antoinekor9042@gmail.com / akornpro@uwo.ca

EDUCATION

- **2013 to 2017: PhD in Applied Mathematics (defended October 23rd 2017)**, Sorbonne University (Paris, France).
Research Director: Professor Raphael Douady. President of the Jury: Professor Olivier Guéant.
Thesis Title: *Financial Crisis Forecasts and Applications to Systematic Trading Strategies*

- **2012 to 2013: Master of Quantitative Finance**, Sorbonne University (Paris, France).

- **2010 to 2012: Master of Pure Mathematics**, Denis Diderot University (Paris, France).

- **2008 to 2010: Bachelor of Pure Mathematics,** Denis Diderot University (Paris, France).

AWARDS AND SCHOLARSHIPS

- **2018:** Two years Post-doctoral contract at University of Western Ontario (London, Canada).

- **2016:** Two years ATER contract as a teaching and research assistant at Sorbonne University (Paris, France).

- **2015:** Four months EDUCO scholarship to work as an invited researcher at Emory University (Atlanta, USA).

- **2013:** Three years doctoral grant awarded at Sorbonne University (Paris, France).

PROFESSIONAL SKILLS

- **Computer Programming: Matlab/R**, **Excel/VBA**, **C/C++**.

- **Languages: French**, **English** and **German**.

- **Finance: Bloomberg Terminal**.

RESEARCH AND TEACHING EXPERIENCE

- **From September 2018:** Post-doctoral Associate at Western University of Ontario (London, Canada).
Supervisor: Professor Matt Davison.
Teaching, Fall 2019 Semester: main instructor for the FM3520 course (Financial Modelling in Discrete Time. 3rd year)
Teaching, Winter 2020 Semester: main instructor for the AM1413 course (Calculus for Engineers, 1st year)
Teaching, Fall 2020 Semester: main instructor for the FM3520 course (Financial Modelling in Discrete Time. 3rd year)

- **September 2013 to September 2018:** Teaching and Research Assistant at Sorbonne University (Paris, France).
Exercise sessions taught (master's): **VBA for Finance**, **Optimization for Economists**, **Microeconomics and Economics of Information**, **Economics Tutorship**, **Mathematics Tutorship**.
Exercise sessions taught (bachelor's): **C Programming, Banking and Market Structure, Real Analysis, Linear Algebra.**

- **May 2016 to August 2016:** Visiting Researcher at Emory University (Atlanta, USA).
Supervisor: Professor Michele Benzi. Subject: **Singular value decomposition and matrix analysis**.

- **January 2013 to June 2013:** Intern at Centre d'Economie de la Sorbonne, Sorbonne University (Paris, France).
Supervisor: Professor Raphael Douady. Subject: **Systemic risk modeling and DCC-GARCH processes**.

- **January 2012 to June 2012:** Intern at Paul Painlevé Laboratory, Lille University (Lille, France).
Supervisor: Professor Benoit Fresse. Subject: **Stasheff's Operad, Laplaza's Operad and Tamari's Lattice**.

- **March 2010 to June 2010:** Intern at Jacques-Louis Lions Laboratory, Paris VII University (Paris, France).
Supervisor: Professor Vincent Millot. Subject: **Mathematics of superfluids, degree theory and Fourier Series.**

RESEARCH INTERESTS

- Random matrix theory applied to the forecasting of financial crises and market behavior.
- Climate change finance and commodity prices modelling under the influence of climate change.
- Algorithmic trading and optimal systematic investment strategies.
- Stochastic calculus and the study of dynamic evolution of distributions fitted to market data.
- Machine learning, neural networks and K-means clustering algorithms used to build forecasts of market evolution.
- Data driven artificial intelligence techniques applied to the design of systematic trading strategies.

PEER REVIEWED PUBLICATIONS AND WORKING PAPERS

- Influence of Climate Change on The Corn Yield in Ontario And its Impact On Corn Farms Income at The 2068 Horizon (2020).
Working Paper, https://arxiv.org/abs/2003.01270

- An Empirical Approach to Financial Crisis Indicators Based on Random Matrices. (2018)
International Journal of Applied and Theoretical Finance, **Volume 21, May 2018.**
DOI: 10.1142/S021902491850022X
https://arxiv.org/abs/1506.00806

- Winning Investment Strategies Based on Financial Crisis Indicators. (2018)
The Journal of Investment Strategies, **issue 7:4, December 2018**.
DOI: 10.21314/JOIS.2018.102
https://arxiv.org/abs/1709.02701

- **Stochastic Evolution of Distributions, Applications to CDS Indices. (2017)**
Working Paper, ftp://mse.univ-paris1.fr/pub/mse/CES2017/17007.pdf

- Essay on the State of Research and Innovation in France and the European Union. (2017)
Chapter in "**Financial Regulation in the E.U"**, *Palgrave Macmillan* (978-3-319-44286-0)
https://arxiv.org/abs/1601.00679

CONFERENCE TALKS AND POSTERS

- **December 2019**: **7th Paris Financial Management Conference (PFMC).** Paris, France

- **December 2017**: **11th Conference on Computational and Financial Econometrics (CFE).** London, UK

- **September 2017**: **2nd International Conference on Computational Finance (ICCF 2017).** Lisbon, Portugal

- **June 2017**: **10th Conference of The Society for Financial Econometrics (SoFiE).** NYU Stern, New York, USA

- **January 2017**: **Bachelier Colloquium 2017**. Métabief, France

- **December 2016**: **10th Conference on Computational and Financial Econometrics (CFE).** Seville, Spain

- **September 2016**: **Quantitative Methods for Financial Regulation**. Stony Brook University, New York, USA

- **July 2016**: **9th World Congress of the Bachelier Finance Society**. New York, USA

- **June 2016**: **36th International Symposium on Forecasting (ISF).** Santander, Spain

- **June 2016**: **Seminar of Emory University's Mathematics Department.** Atlanta, USA

- **April 2016**: **ACAMS/Labex ReFi: Fighting the Finance of Terrorism** (co-organizer). Paris, France

- **January 2016**: **Bachelier Colloquium 2016**. Métabief, France

- **December 2015**: **9th Conference on Computational and Financial Econometrics (CFE).** London, UK

- **September 2015**: **CMAP European Summer School in Financial Mathematics**. Le Mans, France

- **June 2015**: **5th Conference of the Financial Engineering and Banking Society (FEBS).** Nantes, France

- **April 2015**: **9th Doctorissimes of Sorbonne University**. Paris, France

- **September 2014**: **CMAP European Summer School in Financial Mathematics**. Oxford, UK

- **June 2014**: **CEEL Summer School on Financial Crisis**. Trento, Italy

- **March 2014**: **Money, Banking and Finance PhD Students Seminar**. Sorbonne University, Paris, France