

The Working Group on Risk - CREAR, with the support of the IDS dpt, Institut des Actuaire, LabEx MME-DII and the group BFA (SFdS), has the pleasure to invite you to the Seminar by:

Dr. Frank CUYPERS (Prime Re Solutions, Switzerland)

And Salma JAMAL (KPMG, Paris)

November 7, 2017, 12:30pm – 1:30pm  
EEE - ESSEC La Défense (CNIT) – Salle 202

## Artificial Intelligence and Machine Learning: Demystification and Actuarial Cases Studies

While artificial intelligence continues to unleash passions in many areas, actuaries are still reluctant to adhere to this trend they deem ephemeral. The attachment of actuaries to traditional methods partly explains this distrust. However, some methods on which it is based aim to model the functioning of the human brain by mathematical properties. This is the case, in particular, of Machine Learning. Translating economic realities by mathematical algorithms is still, after all, one of the main components of actuaries training. In this presentation, we wish to participate in the demystification of artificial intelligence and of machine learning by recalling some of their principles. We will present some practical cases and will focus on neural networks by exposing the results of a study conducted within an ASTIN working group on the development of non-life reserves with machine learning.

*Financial support from ESSEC Research Center and Labex MME-DII is gratefully acknowledged.*



For any information, please contact  
Frédérique JEAN-LOUIS  
(01 34 43 32 49 / [jeanlouis@essec.edu](mailto:jeanlouis@essec.edu))

<http://crear.essec.edu/working-group-on-risk>



## Dr. Frank CUYPERS

### Prime Re Solutions (Switzerland)

Frank Cuypers is a nuclear engineer, a M.Sc. in nuclear physics and a Ph.D. in theoretical physics, with a vast lecturing experience and a prominent scientific track record in modelling complex systems. As a former Swiss Re Executive and Chief Actuary at the former Zurich Re in Cologne, Frank has a wide experience in most actuarial disciplines, which he has deployed at KPMG and PwC to advise leading insurers & reinsurers. He has also been appointed by FINMA, the Swiss Regulatory Authority, to validate internal solvency models. Moreover, he teaches numerous actuarial engineering and modelling courses and workshops across the globe. Frank is currently the Chairman of ASTIN and presides the CPD Committee of the Swiss Actuarial Association. He is a shareholder of Prime Re Solutions, a general advisor and service provider for insurers & reinsurers through every stage of their business life cycle, from start-up, expansion and consolidation to run-off. He is in charge of its actuarial team and services.



## Salma JAMAL

### KPMG Paris

Salma Jamal is a qualified actuary, fellow of the French Institute of Actuaries. She is graduated from ISFA Lyon, after a Bachelor degree in Mathematics from UPMC (Univ. Paris 6). She worked in the R&D department of NATIXIS Assurance on Mortality and Lapse modelling subjects. Actuarial consultant within KPMG since 2014, she is involved in several topics: projection models, MVBS and reserving processes audit, data government, ...

Salma was laureate of a competition organized by the French Institute of Actuaries and presented an actuarial paper on lapse modelling at the 2016 ASTIN colloquium. She contributed to a paper presented at the 2017 ASTIN colloquium on non-life claims development with Machine Learning methods. To date, she is involved in various projects on Machine Learning (ASTIN working group, submitted paper in revision process, article on neural networks in preparation, ...).



For any information, please contact  
Frédérique JEAN-LOUIS  
(01 34 43 32 49 / [jeanlouis@essec.edu](mailto:jeanlouis@essec.edu))



<http://crear.essec.edu/working-group-on-risk>