

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. Francis BACH

INRIA

September 29, 2017, 12:30pm – 1:30pm
EEE - ESSEC La Défense (CNIT) – Amphi 202

Machine Learning: New Challenges and Opportunities

In this talk, I will discuss recent developments within the machine learning community that are tailored to modern large-scale problems. (1) In supervised learning problems with many observations, online algorithms such as stochastic gradient descent which pass over the data only once, are usually preferred over batch algorithms, which require multiple passes over the data. I will present recent work showing that simple improvements lead to algorithms that are several orders of magnitude faster. (2) For non-linear structured problems, such as in computer vision and natural language processing, multi-layer neural networks have led to state-of-the-art performance. (3) In unsupervised learning problems, learning appropriate representations (such as principal component analysis or K-means) can be generalized to take into account the natural structures of the problem at hand, leading to both better predictive performance and enhanced interpretability.

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Dr. Francis BACH

INRIA

Francis Bach is researcher at INRIA, leading since 2011 the Sierra project-team, which is part of the Computer Science Department at Ecole Normale Supérieure. He completed his Ph.D. in Computer Science at U.C. Berkeley, working with Professor Michael Jordan, and spent two years in the Mathematical Morphology group at Ecole des Mines de Paris, then he joined the Willow project-team at INRIA/Ecole Normale Supérieure from 2007 to 2010. Francis Bach is interested in statistical machine learning, and especially in graphical models, sparse methods, kernel-based learning, convex optimization, vision and signal processing. He obtained in 2009 a Starting Grant, then, in 2016, a Consolidator Grant from the European Research Council. Francis also received in 2012 the INRIA young researcher prize. In 2015, he was program co-chair of the International Conference in Machine learning (ICML).



Labex MME-DII
Modèles Mathématiques et Économiques de la
Dynamique, de l'Incertitude et des Interactions

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