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"Stochastic Approximation Methods for Machine Learning"

Stochastic approximation is currently the method of choice in a variety of machine learning applications, ranging from text and image classification to recommendation systems and search. These methods (and their averaging variants) enjoy favorable learning rates and perform very well in certain parallel computing environments. In spite of a great amount of recent research, it has been difficult so far to incorporate second order information into stochastic approximation methods. In this talk we present a fully stochastic quasi-Newton method for large-scale learning, discuss its theoretical properties, and illustrate its performance on machine learning problems arising in text classification and speech recognition.

Bio:
Jorge Nocedal is the Walter P. Murphy Professor of Industrial Engineering and Management Sciences at Northwestern University. He holds a B.S. degree in physics from UNAM and a PhD in mathematical sciences from Rice University. His research interests are in nonlinear optimization and its application in machine learning and in problems involving differential equations. He is currently the Editor in Chief of the SIAM Journal on Optimization, is a SIAM Fellow, and was awarded the 2012 George B. Dantzig Prize.