



**Workshop EPFL-Inria
January 9 and 10, 2020, Montbonnot**

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Title: « How to efficiently stream PCA and CCA »

Abstract:

In this talk we consider the problems of Principal Component Analysis and Canonical Correlation Analysis in the stochastic setting. We first show how to accelerate the slow rate of the randomized power method (without requiring knowledge of the eigengap) into a robust algorithm achieving the optimal rate of convergence. Then we present a new optimal algorithm for solving streaming CCA. These two new algorithms are obtained borrowing ideas from the theories of Riemannian optimization and two-time-scale stochastic approximation.