



**Workshop EPFL-Inria  
15 et 16 février 2018, Paris**

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**Title:** « Learning in a Distributed and Heterogeneous Environment »

**Abstract:**

We discuss recent directions in optimization algorithms used for the training of machine learning systems, such as generalized linear models (regression, classification) and deep learning.

For distributed optimization when using many machines, as well as for integrated compute devices with greatly varying compute and memory capacities (such as GPUs paired with regular compute nodes), we present ideas from convex optimization which help greatly accelerating training. In particular, we will employ importance sampling methods and primal-dual gap techniques.

joint work with Celestine Dünnér, Thomas Parnell, Anant Raj and Sebastian Stich.