
Federated Stochastic Approximation of the EM Algorithm

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Abstract

1 To be completed

2 **1 sEM methods for Federated Learning**

- 3 • Exact expectations
4 • Incremental and variance reduced methods

5 **2 SAEM algorithm for Federated Learning**

- 6 • SA of the expectations
7 • Monte Carlo approximations
8 • Exponential Family
9 • Statistics stored on devices and parameters computed on device
10 • FedAvg on central server — \rightarrow boils down to the Averaging of parameters that we may
11 do in standard central settings (Polyak)
12 • Applications to PK-PD modeling

13 **3 Numerical Examples**