数学与系统科学研究院

计算数学所学术报告

报告人：**Senior Researcher Lin XIAO**

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报告题目：

Communication-Efficient Distributed Optimization of Self-Concordant Empirical Loss

邀请人： 戴彧虹 研究员

报告时间：**2015 年 6 月 23 日（周四）**

下午 15:30~16:30

报告地点： 科技综合楼三层

311 报告厅

Abstract：

We consider distributed convex optimization problems originated from sample average approximation of stochastic optimization, or empirical risk minimization in machine learning. We propose a communication-efficient distributed algorithm, which requires a small number of communication rounds to reach a specified optimization precision. The algorithm is based on an inexact damped Newton method, where the inexact Newton steps are computed by a distributed preconditioned conjugate gradient method. We analyze its iteration complexity and communication efficiency for minimizing self-concordant empirical loss functions, and discuss the results for several popular machine learning tasks. In a standard setting for supervised learning where the problem condition number grows with the total sample size, the required number of communication rounds of our algorithm does not increase with the sample size, but only grows slowly with the number of machines in the distributed system. This is joint work with Yuchen Zhang.

欢迎大家参加！