

数学与系统科学研究院

计算数学所学术报告

报告人: **Prof. Chih-Jen Lin**(林智仁)

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报告题目:

**Optimization methods for large-scale
linear classification**

邀请人: 戴彧虹、吕召松

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报告地点: **科技综合楼三层 311**

计算数学所报告厅

Abstract:

Linear classification is a useful tool in machine learning and data mining. For some data in a rich dimensional space, the performance (i.e., testing accuracy) of linear classifiers has shown to be close to that of nonlinear classifiers such as kernel methods, but training and testing speed is much faster. In this talk, we discuss various types of optimization methods for training large-scale linear classifiers. They range from second-order methods (e.g., Newton-CG) to first-order methods (e.g., coordinate descent or stochastic gradient descent). Although these methods are standard optimization techniques, when applied to machine learning, some adjustments or enhancements are very useful. We investigate how machine learning properties are incorporated in their design. We also check that for given machine learning data, how to choose a suitable optimization method. In the end we discuss optimization methods for big-data machine learning.

bio:

Chih-Jen Lin is currently a distinguished professor at the Department of Computer Science, National Taiwan University. He obtained his B.S. degree from National Taiwan University in 1993 and Ph.D. degree from University of Michigan in 1998. His major research areas include machine learning, data mining, and numerical optimization. He is best known for his work on support vector machines (SVM) for data classification. His software LIBSVM is one of the most widely used and cited SVM packages. For his research work he has received many awards, including the ACM KDD 2010 and ACM RecSys 2013 best paper awards. He is an IEEE fellow, an AAAI fellow and an ACM distinguished scientist for his contribution to machine learning algorithms and software design. More information about him can be found at <http://www.csie.ntu.edu.tw/~cjlin>.

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