Remarks

Michael is good at statistical learning

Books that will help

http://www.statsblogs.com/2014/12/30/machine-learning-books-suggested-by-michael-i-jordan-from-berkeley/

My Outline

【7.22 p.m.】

- theme

Artificial Intelligence： perspective and challenges
Inference & privacy
no slides

【7.23】

- theme

<a.m.> the cost function of some ML algorithms
logistic regression, LASSO regression, linear regression and show the differences of the choice of norm; PCA; K-Means.
<p.m.>
The convergence of convex optimization
Talking about Lipchitz, the bound and convergence rate of optimization algorithm, which turns out always with respect to t (the number of train data)

No slides

【7.24】

- theme

i. show the necessary of smoother assumption and strong convex assumption;
ii. Bregman divergence; and derive the boundary of Bregman divergence.（平滑操作大于强凸）
iii. derive the convergence rate with assumption of smooth and strong convex
iv. P(projection)GD、SGD、Controlled SGD（SVRG，LiHua lei）、Mirror Descent (Nemirovsky)
v. How to get rid of saddlepoints:
one is first-order stationary points and make a choice;
the other is PGD(Perturbed)
vi. Derive the correct of the operational mirror algorithms

- Summary
  1) It turns out the boundary and convergence rate always influenced by the number of train data

2) More train data always help us get a more optimum result, at least won't decrease
3) It also with respect to the Lipschitz condition
4) It seems the mirror descent is similar to the kernel function, right??

【7.25】

- theme

i. Derive the boundary of mirror descent
ii. See slides of 《Variational, Hamiltonian and Symplectic Perspectives on Acceleration》
iii. Change the O.S.（optimization system）as a problem of energy
iv. Some discussions of model free and model setting