

STATISTICS COLLOQUIUM

FEBRUARY 13, 2012

TALK: 4:00 P.M. — SCIENCE CENTER RM. 705

RECEPTION: 5:15 PM — SCIENCE CENTER, 7TH FLOOR

“Learning with Asymmetry and High Dimension”

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ABSTRACT

We explore several extensions of the traditional binary classification. In the first part of the talk, we address classification with an asymmetric loss under the Neyman-Pearson (NP) paradigm. We will study two methods to build classifiers: empirical risk minimization and the plug-in approaches. For both methods, we derive a new type of oracle inequalities that are meaningful in the NP paradigm. Like most nonparametric methods, the plug-in approach suffers from the curse of dimensionality, and we will introduce two methods under the high-dimensional setup in the second part of the talk. One method learns a linear decision boundary and the other learns a nonlinear one. They are implemented using regularized discriminative criterions.