Math Club Colloquium

Empirical Bayes and Stein's Lemma, with Applications (Engineering & Financial)

Speaker – Dr. Martin Raphan
Brooklyn College
Finance and Business Management

Abstract: A universal problem that arises across many disciplines is that of gathering information about an environment, subject to unavoidable imperfections in the measurement process. Of fundamental importance, then, is learning to estimate uncorrupted signals based on corrupted measurements. Classical solutions to this problem rely on prior information about the measured environment, either assumed, or learned during a training phase where uncorrupted data is available. In many situations, however, uncorrupted data is never available, so there can be no training and no basis for prior assumptions. In this talk, I will describe a general statistical framework for solving this estimation problem without prior information, relying only on knowledge of how the corruption process works. I will discuss the relationship between this framework, Stein's Lemma and Empirical Bayes. I will also discuss applications of these methodologies to Engineering and Finance.

Date: Tuesday Oct 29, 2013 12:30-1:30pm
Location: 1127N (Lunch will be Served)

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