Title: Nonparametric Bayesian Kernel Models

Abstract: Massive high-dimensional data brought by new technology are in nearly
every branch of science. One feature of high dimensional data is that they often have relatively small replicates or sample sizes. Such a ``large $p$ small $n$'' paradigm has led to fundamental questions on constructing and interpreting statistical analysis. In this talk, we will present a nonparametric Bayesian kernel model to address challenges arising in ``large p small n'' paradigm, overcompleteness, and the use of unlabelled data. We developed a nonparametric Bayesian model with priors over the whole RKHS and showed a Bayesian representor Theorem. Compared
with previous work, our approach provides a coherent model for all sample size and automatically deals with ancillary information such as unlabelled data in semi-supervised learning.

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