The University of Chicago
Department of Statistics

STATISTICS COLLOQUIUM

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Learning Mixtures of Gaussians and Other Distributions

MONDAY, April 9, 2012, at 4:00 PM
133 Eckhart Hall, 5734 S. University Avenue
Refreshments following the seminar in Eckhart 110.

ABSTRACT

The study of Gaussian mixture distributions goes back to the late 19th century, when Pearson introduced the method of moments to analyze the statistics of a crab population. Gaussian mixtures have since become one of the most popular tools of modeling and data analysis used extensively in speech recognition and many other fields.

In recent years, there has been a significant amount of work, particularly in the theoretical computer science literature, analyzing the hardness of learning Gaussian mixtures as a function of dimension and separation between the mixture components. I will discuss our recent work, which, in a sense, completes this line of research by establishing quite general conditions for polynomial learnability of Gaussian mixture models as well as other families of distributions using methods of algebraic geometry.

Joint work with Kaushik Sinha.
