



RUTGERS
UNIVERSITY

Department of Statistics & Biostatistics
Hill Center, Room 501
School of Arts & Sciences
Rutgers, The State University of New Jersey
110 Frelinghuysen Road.
Piscataway, New Jersey 08854-8219

www.stat.rutgers.edu
agray@stat.rutgers.edu
848-445-2690
732-445-3428 (fax)

RUTGERS UNIVERSITY

DEPARTMENT OF STATISTICS AND BIOSTATISTICS DEPARTMENT OF COMPUTER SCIENCE

Seminar

Speaker: **Dr. Daniel Hsu**
Microsoft Research

Title: **Fast learning algorithms for discovering the hidden structure in data**

Time: **3:20 – 4:20pm, Wednesday, February 20, 2013**

Place: **552 Hill Center**

Abstract

A major challenge in machine learning is to reliably and automatically discover hidden structure in data with little or no human intervention. Many of the core statistical estimation problems of this type are, in general, provably intractable for both computational and information-theoretic reasons. However, much progress has been made over the past decade or so to overcome these hardness barriers by focusing on realistic cases that rule out the intractable instances. In this talk, I'll describe a general computational approach for correctly estimating a wide class of statistical models, including Gaussian mixture models, Hidden Markov models, Latent Dirichlet Allocation, Probabilistic Context Free Grammars, and several more. The scope of the approach extends beyond the purview of previous algorithms; and it leads to both new theoretical guarantees for unsupervised learning, as well as fast and practical algorithms for large-scale data analysis.

**** Refreshments will be served at @2:50pm in Room 502 Hill Center ****

Any inquiries please contact Ms. Arlene Gray at 848-445-7670 or agray@stat.rutgers.edu

