

2010 – 2011 Department of Computer Sciences

Distinguished Lecture Series

Michael I. Jordan

Completely Random Measures
for Bayesian Nonparametrics

October 25, 2010 / Room 1240 CS / 3:30 PM

Computer Science has historically been strong on data structures and weak on inference from data, whereas Statistics has historically been weak on data structures and strong on inference from data. One way to draw on the strengths of both disciplines is to pursue the study of "inferential methods for data structures"; i.e., methods that update probability distributions on recursively-defined objects such as trees, graphs, grammars and function calls.



This is accommodated in the world of "Bayesian nonparametrics," where prior and posterior distributions are allowed to be general stochastic processes. Both statistical and computational considerations lead one to certain classes of stochastic processes, and these tend to have interesting connections to combinatorics. I will focus on Bayesian nonparametric modeling based on completely random measures, giving examples of how recursions based on these measures lead to useful models in several applied problem domains, including protein structural modeling, natural language processing, computational vision, and statistical genetics.

Ken Birman

The Price of Consistency in
Cloud Computing Systems
November 30, 2010



Peter M. Chen

Deterministic replay: appli-
cations, techniques, and op-
portunities
December 18, 2010



Eric Horvitz

Machine Intelligence and
the Open World



Tom M. Mitchell

Never-Ending Learning
March 2011



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