

The
University of Michigan
Department of Biostatistics

Presents

Peter Mueller PhD

Speaking On:

A DEPENDENT POLYA TREE MODEL

We propose a probability model for a family of unknown distributions indexed with covariates. The marginal model for each distribution is a Polya tree prior. The proposed model introduces the desired dependence across the marginal Polya tree models by defining dependent random branching probabilities of the unknown distributions.

An important feature of the proposed model is the easy centering of the nonparametric model around any parametric regression model. This is important for the motivating application to the proportional hazards (PH) model. We use the proposed model to implement nonparametric inference for survival regression. The proposed model allows us to center the nonparametric prior around parametric PH structures. In contrast to many available models that restrict the non-parametric extension of the PH model to the baseline hazard, the proposed model defines a family of random probability measures that are a priori centered around the PH model but allows any other structure. This includes, for example, crossing hazards, additive hazards, or any other structure as supported by the data.

Thursday, October 29, 2009
3:30 p.m. – Room M1152, SPH II
Coffee and Cookies will be served for seminar guests at
3:00 p.m. in SPH II, Room M4034