

Title: Workshop: Bayesian Latent Variable Models

Instructor: Jeffrey Rouder

Abstract:

A key goal for modern experimental psychologists is to describe the structure of individual variation across experimental tasks and measures. Studying individual differences across tasks and measures implies a repeated measures design where each participant provides more than a single observation. In this workshop, I develop Bayesian mixed and Bayesian latent variable models. There are two key goals: first to develop mixed models that have separate sources of variation within participants and between participants. The second is to develop latent-variable simplifications so that parsimonious and meaningful models of individual difference may be proposed and analyzed. Analysis occurs within the Bayesian framework as it is conceptually straightforward and (sometimes) computationally convenient in this domain. Specifics include understanding marginal and conditional specifications and implementation in JAGS. The state-of-the-art here is unsettled, and open problems pertinent for psychologists are discussed. Students should already have some familiarity with R (or python) and a rudimentary introduction to Bayesian analysis.

Assignment: Active participation

Credits: 2 workshop days