

Variational Approximations In Semiparametric Regression

Matt Wand

University of Wollongong, Australia

Variational approximations are a body of analytic procedures for handling difficult probability calculus problems. They have been used extensively in Statistical Physics and Computer Science. Variational approximations offer an alternative to Markov chain Monte Carlo methods and have the advantage of being faster and not requiring convergence diagnoses, albeit with some loss in accuracy. Despite the growing literature on variational approximations, they currently have little presence in mainstream Statistics. We describe recent work on the transferral and adaptation of variational approximation methodology to contemporary Statistics settings such as generalised linear mixed models and semiparametric regression. This talk represents joint research with and Professor Peter Hall and Dr John T. Ormerod.