

Bayesian Computation Strategies for Big Data and Intractable Models

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Abstract

Bayesian computation is in double jeopardy due to massive data volumes that make the usual MCMC samplers too computationally expensive and/or models with intractable likelihoods. Even under such adverse conditions, Bayesian data analysis can still be conducted using divide and conquer strategies and/or approximate methods such as Approximate Bayesian Computation (ABC) or Bayesian Synthetic Likelihood (BSL). We discuss some recent work that addresses these challenges, including perturbed MCMC samplers that are used within the ABC and BSL paradigms to significantly accelerate computation while maintaining control on computational efficiency.