

A Simple Algorithm for Scalable Monte Carlo Inference

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Statistical inference involves estimation of parameters of a model based on observations. Building on the recently proposed Equilibrium Expectation approach and Persistent Contrastive Divergence, we derive a simple and fast Markov chain Monte Carlo algorithm for maximum likelihood estimation (MLE) of parameters of exponential family distributions. The algorithm has good scaling properties and is suitable for Monte Carlo inference on large network data with billions of tie variables. The performance of the algorithm is demonstrated on Markov random field, conditional random field, exponential random graph models and Boltzmann machines.