Approximate Inference for LDA

- Many different ways; each has its pros & cons

- Deterministic approximation
  - variational Bayes [Blei et al. 03a]
  - collapsed variational Bayes [Teh et al. 07]
  - expectation propagation [Minka & Lafferty 02]
- Markov chain Monte Carlo
  - full Gibbs sampler [Pritchard et al. 00]
  - collapsed Gibbs sampler [Griffiths & Steyvers 04]

Very efficient and quite popular, but can only work with conjugate priors