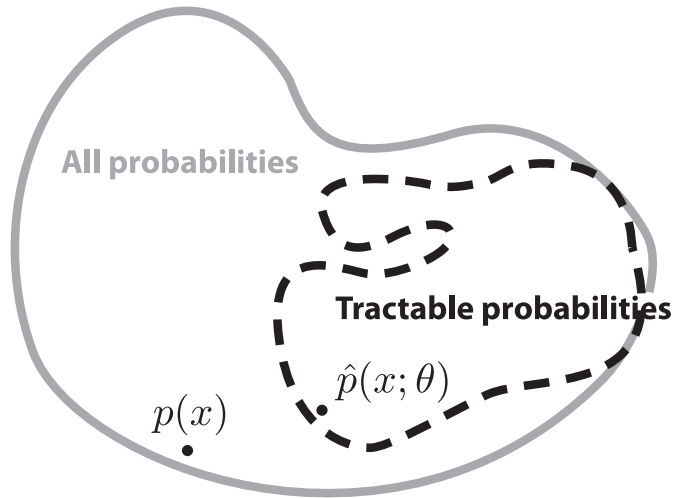
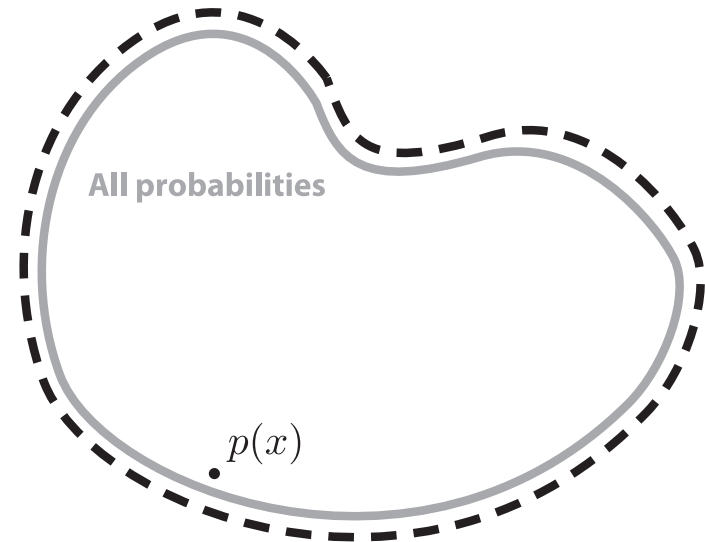


A stochastic approximation method for inference in probabilistic graphical models

Peter Carbonetto, Matthew King and Firas Hamze



Existing variational methods.



Ours.

THE BASIC IDEA

Iterate:

1. **Stochastic approximation step:** adjust θ in direction $-g$, where g is a Monte Carlo estimate of the gradient.
2. **Sequential Monte Carlo step:** update samples to reflect new density $p(x; \theta)$