General stochastic methods

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Outline

Rejection sampling with the uniform distribution

Let Ω be the state space or *support* of x. Let $U(\Omega)$ be the uniform distribution over Ω

Also notice that $p(x) \leq 1 \;\; \forall x \in \Omega$

The following procedure produces a sample $x \sim p(x)$.

1. Sample $u \sim U(\Omega)$
2. Sample $y \sim U([0, 1])$
3. If $y < p(u)$ return y as a sample of $p(x)$

This algorithm suffers from the curse of dimensionality. Generally, sampling becomes

References I