

Handout

No evidence: Prior Sampling

Input: no evidence

for $i=1, 2, \dots, m$

- Sample x_i from $P(X_i \mid \text{Parents}(X_i))$

return $(x_1, x_2, \dots, x_m)$

Some evidence: Likelihood Weighted Sampling

Input: evidence instantiation

$w = 1.0$

for $i=1, 2, \dots, m$

if X_i is an evidence variable

- $X_i = \text{observation } x_i \text{ for } X_i$
- Set $w = w * P(x_i \mid \text{Parents}(X_i))$

else

- Sample x_i from $P(X_i \mid \text{Parents}(X_i))$

return $(x_1, x_2, \dots, x_m), w$

All evidence: Likelihood Weighted

Input: evidence instantiation

$w = 1.0$

for $i=1, 2, \dots, m$

- Set $w = w * P(x_i \mid \text{Parents}(X_i))$

return w