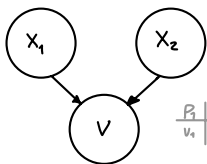


Bayes-Net MLE

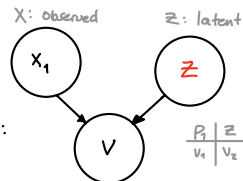
Complete Data:



β_1	β_2	V	P_r
v_1	v_2	T	$?$

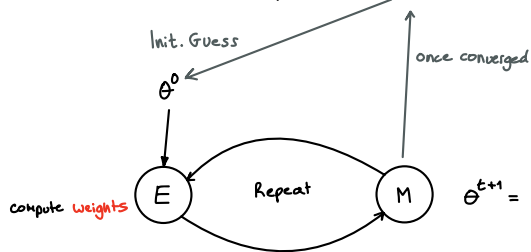
$$\theta_{V=j, \text{par}(V)=v} = \frac{\# e \in E : V=j, \text{par}(V)=v}{\# e \in E : \text{par}(V)=v}$$

Incomplete Data:



β_1	β_2	V	P_r
v_1	v_2	T	$?$

$$\theta_{V=T, \text{par}(V)=v} = ???$$



$$\theta^{t+1} = \frac{\sum_i w_{ij} \text{ for all } e = \{x_i, z_j\} : V=j, \text{par}(V)=v}{\sum_i w_{ij} \text{ for all } e = \{x_i, z_j\} : \text{par}(V)=v}$$

For each $x_i \in X$ and value for z_j, z_i

$$\text{compute } w_{ij} = P(z_j | \theta, x_i)$$

compute w Variable Elimination