19.6.07

Pf Interaction

What is the relationship between Pf and some other variables?

We need to label the variables and determine their interactions.

\[ P_{ij} = P\left( x_{t+1} = j \mid x_t = i \right) = \sum_{(i,j) \in E} \left( \frac{d_i}{d_j} \right) \]

\[ P(x_t = j \mid x_t = i) = \frac{1}{\sum_{j \neq i} P(x_{t+1} = j \mid x_t = i)} \]

\[ \pi_i = \frac{d_i}{Z(i)} \]

Can we define some criteria for clustering?
\[ p(L_1, \ldots, L_n) = \frac{1}{Z} \exp \left( \sum_{i=1}^{n} \sum_{j=1}^{n} \omega_{ij} L_i L_j \right) \]

\[ \omega_{ij} (L_i, L_j) = \begin{cases} \Theta^+ & L_i = L_j = 1 \\ \Theta^- & L_i = L_j = -1 \\ 0 & L_i \neq L_j \end{cases} \]

Markov Random Fields

Associative MRF

\( p(L_1, \ldots, L_n) \)

\( \text{most likely assignment: } \arg \max_{L_1, \ldots, L_n} p(L_1, \ldots, L_n) \)
$$\text{cost}(\text{Cut}) = \sum_{e \in \text{Cut}} c_e$$

$$\Delta = w_i^1(-1) - w_i^1(+1)$$

$$w_i^1(-1) = w_i^1(+1)$$

$$\theta_+ = \theta_-$$

$$\theta_+ + \theta_- = 0$$

$$C_1 = 2C_e$$

$$C_1 \text{ is a function of cost(cut)} = \sum_{e \in \text{Cut}} (w_i^e(+1), w_i^e(-1))$$

$$\Delta = |w_i^e(+1) - w_i^e(-1)|$$