$$S^{(i)} = (S_1^{(i)} \cdots S_m^{(i)})$$

$$\max_{\Theta} \; \log P_\Theta(S_{(i)}) \equiv \max_{\Theta} \; \sum_{j=1}^{m} \log P_\Theta\left(S_j^{(i)} \mid \underbrace{neighbors(S_j^{(i)})}\right)$$