CMPTG 5 - HW 3 - Boltzmann Machines

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1. Complete the derivation from the lecture notes to show that the derivative of the log-likelihood with respect to the biases is

$$\frac{\partial \mathcal{L}}{\partial h_i} = \frac{1}{N} \sum_{\text{training samples}} \langle m_i \rangle_{data} - \langle m_i \rangle_{model} \tag{1}$$

2. Build your own Boltzmann machine! Train it to learn some low dimensional artificial dataset (say a 2-D Gaussian).