

Classification with Restricted Boltzmann Machines

Projects in Machine Learning and AI

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$$E(\mathbf{v}, \mathbf{h}) = \sum_{i=1}^V \frac{(\mathbf{v}_i - \mathbf{b}_i^v)^2}{2\sigma_i^2} - \sum_{j=1}^H \mathbf{b}_j^h \mathbf{h}_j - \sum_{i=1}^V \sum_{j=1}^H \frac{\mathbf{v}_i}{\sigma_i} \mathbf{h}_j \mathbf{w}_{ij} \quad (1)$$

$$\mathbf{p}(\mathbf{v}, \mathbf{h}) = \frac{\mathbf{e}^{-E(\mathbf{v}, \mathbf{h})}}{\sum_{\mathbf{x}} \sum_{\mathbf{k}} \mathbf{e}^{-E(\mathbf{x}, \mathbf{k})}} \quad (2)$$

