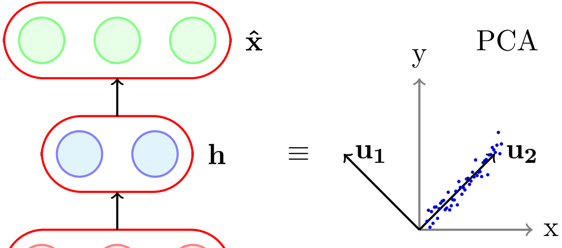
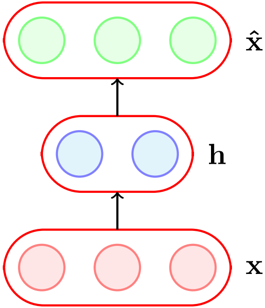
Module 7.7 : Summary



$$P^T X^T X P = D$$



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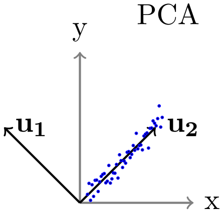
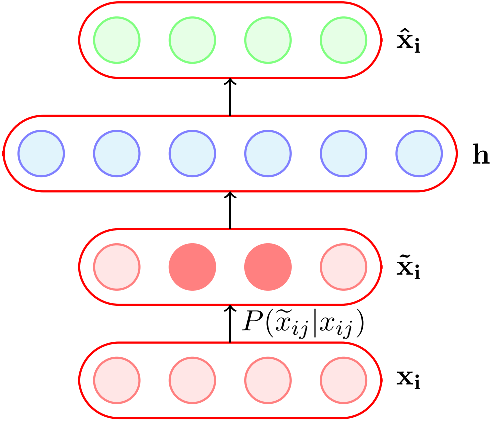
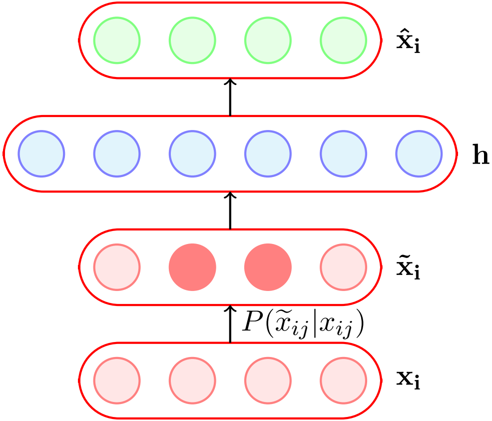


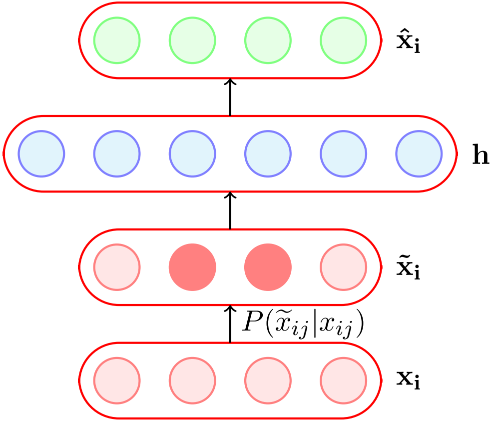
$$P^T X^T X P = D$$

$$\min_{\theta} \|X - \underbrace{HW^*}_{\substack{U\Sigma V^T \\ \text{(SVD)}}}\|_F^2$$


$\hat{\mathbf{x}}_\mathbf{i}$
$\mathbf{h}$
$\tilde{\mathbf{x}}_\mathbf{i}$
$P(\widetilde{x}_{ij}|x_{ij})$
$\mathbf{x}_\mathbf{i}$

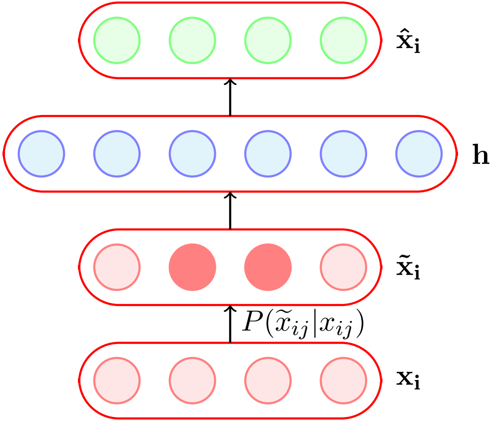


Regularization



Regularization

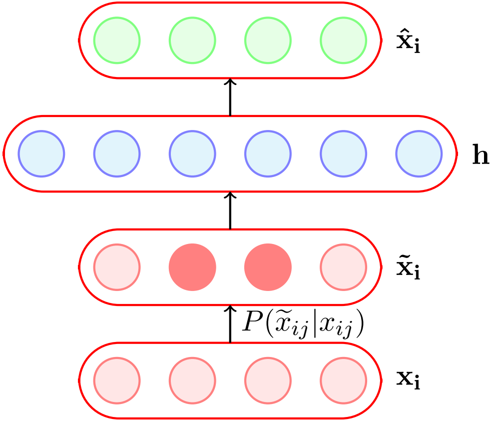
$\Omega(\theta) = \lambda\|\theta\|^2$ Weight decaying



Regularization

$$\Omega(\theta) = \lambda\|\theta\|^2$$ Weight decaying

$$\Omega(\theta) = \sum_{l=1}^{k} \rho \log \frac{\rho}{\hat{\rho}_l} + (1-\rho)\log\frac{1-\rho}{1-\hat{\rho}_l}$$ Sparse



Regularization

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$$\Omega(\theta) = \sum_{l=1}^{k} \rho \log \frac{\rho}{\hat{\rho}_l} + (1-\rho) \log \frac{1-\rho}{1-\hat{\rho}_l}$$ Sparse

$$\Omega(\theta) = \sum_{j=1}^{n} \sum_{l=1}^{k} \left(\frac{\partial h_l}{\partial x_j} \right)^2$$ Contractive