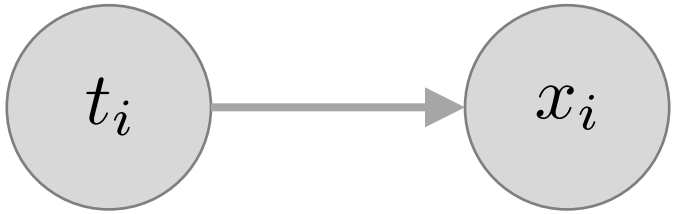
Principal Component Analysis



$$p(t_i) = \mathcal{N}(0, I)$$

$$p(x_i \mid t_i, \theta) = \mathcal{N}(Wt_i + b, \Sigma)$$

$$\max_{\theta} p(X \mid \theta) = \prod_{i=1}^{N} p(x_i \mid \theta)$$

$$= \prod_{i} \underbrace{\int p(x_i \mid t_i, \theta) p(t_i) dt_i}_{\text{conjugacy, } \mathcal{N}(\mu_i, \Sigma_i)}$$