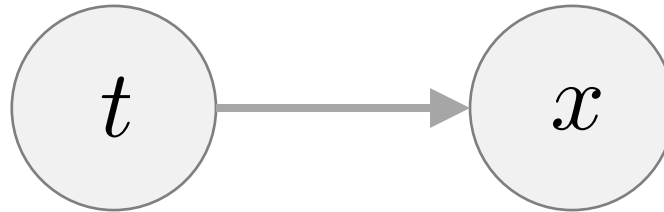


Introducing latent variable

$$p(x \mid \theta) = \pi_1 \mathcal{N}(x \mid \mu_1, \Sigma_1) + \pi_2 \mathcal{N}(x \mid \mu_2, \Sigma_2) \\ + \pi_3 \mathcal{N}(x \mid \mu_3, \Sigma_3)$$



$$p(t = c \mid \theta) = \pi_c$$

$$p(x \mid t = c, \theta) = \mathcal{N}(x \mid \mu_c, \Sigma_c)$$