Objective interpretation

$$\text{max.} \sum_i \mathbb{E}_{q_i} \log \frac{p(x_i \mid t_i, w)p(t_i)}{q_i(t_i)}$$

$$= \sum_i \mathbb{E}_{q_i} \underbrace{\log p(x_i \mid t_i, w)}_{-\|x_i - \mu(t_i)\|^2 + \text{const}} - \mathcal{KL}(q_i(t_i) \parallel p(t_i))$$

Reconstruction loss

Approximate posterior
$q(t_i) \approx p(t_i \mid x_i, w)$

Regularization