

# Parameter Estimation and Inferences in LDA

- Parameters can be estimated using ML estimator

$$(\hat{\vec{\alpha}}, \hat{\vec{\beta}}) = \arg \max_{\vec{\alpha}, \vec{\beta}} \log p(C | \vec{\alpha}, \vec{\beta})$$

**How many parameters in LDA vs. PLSA?**

- However,  $\{\theta_j\}$  and  $\{\pi_{d,j}\}$  must now be computed using posterior inference
  - Computationally intractable
  - Must resort to approximate inference
  - Many different inference methods are available