Find the $\underset{\boldsymbol{\pi}}{\operatorname{argmax}}$ of this expectation

Now that we have the expected value of $\ell(\boldsymbol{\pi})$ with respect to the conditional distribution of $\mathbf{z}$, we need only evaluate

$$\hat{\boldsymbol{\pi}}^{(t)} = \underset{\boldsymbol{\pi}}{\operatorname{argmax}}\, \mathbb{E}\left[\ell(\boldsymbol{\pi}) \middle| \mathbf{x}, \mathbf{y}, \hat{\boldsymbol{\pi}}^{(t-1)}\right]$$

Which can be analytically specified, at each time t, as:

$$\hat{\pi}_k^{(t)} = \frac{\sum_{i=1}^{n} w_{ij}^{(t-1)}}{n}$$

$$\text{where} \qquad w_{ij}^{(t+1)} = \frac{\pi_j^{(t)} f_j(x_i, y_i)}{\sum_{k=1}^{m} \pi_k^{(t)} f_k(x_i, y_i)}$$