

$$\begin{array}{ccccccc}
\pi^{\mathcal{P}}(\mathbf{x}_1 \mid \mathbf{c}_1), & \dots & , & \pi^{\mathcal{P}}(\mathbf{x}_j \mid \mathbf{c}_1), & \dots & & \\
& \dots & , & \dots & , & \dots & , & \dots \\
\pi^{\mathcal{P}}(\mathbf{x}_1 \mid \mathbf{c}_i), & \dots & , & \pi^{\mathcal{P}}(\mathbf{x}_j \mid \mathbf{c}_i), & \dots & & \\
& \dots & , & \dots & , & \dots & , & \dots
\end{array}$$

Conditional Probabilities