

$$\begin{aligned}
 p(\mathbf{z}, \mathbf{h}|\mathbf{y}) &= \frac{p(\mathbf{y}|\mathbf{z}, \mathbf{h})p(\mathbf{z}|\mathbf{h})p(\mathbf{h})}{\int \left(\int p(\mathbf{y}|\mathbf{z}, \mathbf{h})p(\mathbf{z}|\mathbf{h})d\mathbf{z} \right) p(\mathbf{h})d\mathbf{h}} \\
 &= \frac{p(\mathbf{y}|\mathbf{z}, \mathbf{h})p(\mathbf{z}, \mathbf{h})}{p(\mathbf{y})}
 \end{aligned}$$