

$$\begin{array}{c}
 \text{Posterior probability} \\
 P\left( \begin{array}{c} \text{Phylogenetic Tree} \\ \text{1 2 3 4} \end{array} \mid \begin{array}{c} \text{Sequence Alignment} \\ \begin{array}{l} 1 \text{ A T A A C T T C A T T G T A G A T A A T A A T} \\ 2 \text{ C T A A C T T C A T T G T A G A T A A T A A T} \\ 3 \text{ A C A G C C T C A T T G T G G A C G A C A A T} \\ 4 \text{ A T G G T C C T - C C A G A A G C A G T G - C} \end{array} \end{array} \right) = \frac{
 \begin{array}{c}
 \text{Likelihood} \\
 \text{Prior Probability} \\
 P\left( \begin{array}{c} \text{Sequence Alignment} \\ \begin{array}{l} 1 \text{ A T A A C T T C A T T G T A G A T A A T A A T} \\ 2 \text{ C T A A C T T C A T T G T A G A T A A T A A T} \\ 3 \text{ A C A G C C T C A T T G T G G A C G A C A A T} \\ 4 \text{ A T G G T C C T - C C A G A A G C A G T G - C} \end{array} \right) P\left( \begin{array}{c} \text{Phylogenetic Tree} \\ \text{1 2 3 4} \end{array} \right)
 \end{array}
 }{
 \begin{array}{c}
 \text{Normalizing constant} \\
 P\left( \begin{array}{c} \text{Sequence Alignment} \\ \begin{array}{l} 1 \text{ A T A A C T T C A T T G T A G A T A A T A A T} \\ 2 \text{ C T A A C T T C A T T G T A G A T A A T A A T} \\ 3 \text{ A C A G C C T C A T T G T G G A C G A C A A T} \\ 4 \text{ A T G G T C C T - C C A G A A G C A G T G - C} \end{array} \right)
 \end{array}
 }
 \end{array}$$