Some other applications of HMM (informal discussion)

Auto-correct in smartphone keyboards

\[
P(m_1 | s_1) = P(m_1 = \text{location of } 0 \mid s_1 = \begin{bmatrix} 0 \\ 2 \\ 3 \end{bmatrix}) = \frac{1}{2} (2
dist. to center of key a)
\]

\[
P(s_2 | s_1) = P(s_2 = \begin{bmatrix} \circ \\ \circ \\ \circ \end{bmatrix} \mid s_1 = \begin{bmatrix} \circ \\ \circ \\ \circ \end{bmatrix}) = \frac{1}{2} (2)
\]

From an English Dictionary

Decodes to "quell" or "qualm" or "while"...

Similar application in speech recognition

\[
P(m_k | s_k) = P(m_k = \begin{bmatrix} a' \\ b' \\ c' \end{bmatrix} \mid s_k = \begin{bmatrix} a' \\ b' \\ c' \end{bmatrix})
\]

\[
P(c(s_{k+1} | s_k) = P(s_{k+1} = j' \mid s_k = k') = 0
\]