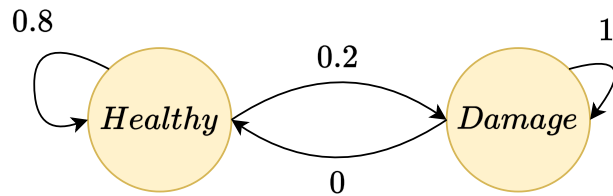


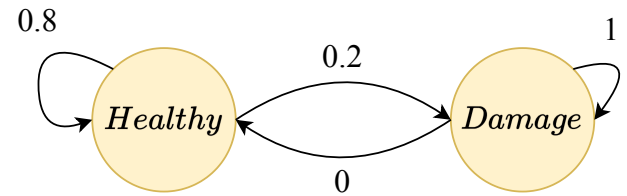
States space $\mathbb{S} = \{Health, Damage\}$
Markov Chain



► Transition matrix $\mathbf{T} = [T(s'|s)] = \begin{bmatrix} 0.8 & 0.2 \\ 1 & 0 \end{bmatrix}$

► The states are fully observable

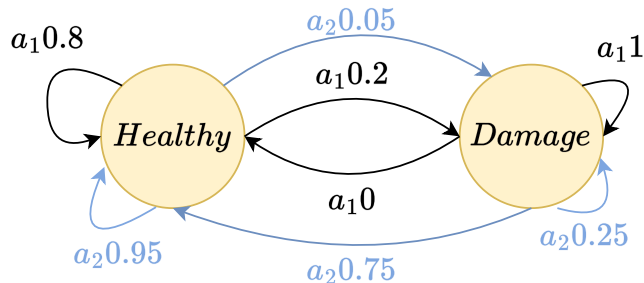
Hidden Markov Chain



► Transition matrix $\mathbf{T} = [T(s'|s)] = \begin{bmatrix} 0.8 & 0.2 \\ 1 & 0 \end{bmatrix}$

► Observation matrix $\mathbf{O} = [O(o|s)] = \begin{bmatrix} 0.8 & 0.2 \\ 0.3 & 0.7 \end{bmatrix}$

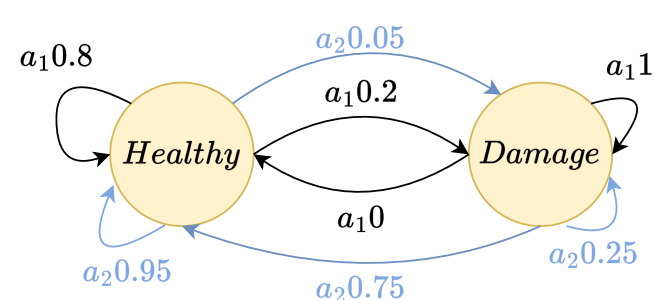
Markov Decision Process



► Transition matrix $\mathbf{T} = [T(s'|s, a)] = \begin{bmatrix} 0.8 & 0.2 \\ 0.95 & 0.05 \\ 1 & 0 \\ 0.75 & 0.25 \end{bmatrix}$

► The states are fully observable

Partially Observable Markov Decision Process



► Transition matrix $\mathbf{T} = [T(s'|s, a)] = \begin{bmatrix} 0.8 & 0.2 \\ 0.95 & 0.05 \\ 1 & 0 \\ 0.75 & 0.25 \end{bmatrix}$

► Observation matrix $\mathbf{O} = [O(o|s)] = \begin{bmatrix} 0.8 & 0.2 \\ 0.3 & 0.7 \end{bmatrix}$