$$\pi = \pi P,$$

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$$\pi \mathbf{1} = 1$$

$P \rightarrow n \times n$ dim $\quad \pi = [\pi_1\ \pi_2\ \pi_3]$ 3-state

$$[\pi_1\ \pi_2\ \pi_3] = [\pi_1\ \pi_2\ \pi_3] \begin{bmatrix} P_{11} & P_{12} & P_{13} \\ P_{21} & P_{22} & P_{23} \\ P_{31} & P_{32} & P_{33} \end{bmatrix}$$

$$[\pi_1\ \pi_2\ \pi_3] \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix} = 1$$

$\pi - \pi P = 0$

$\Rightarrow \pi(P - I) = 0$

A $\quad [0\ 0\ 0]$

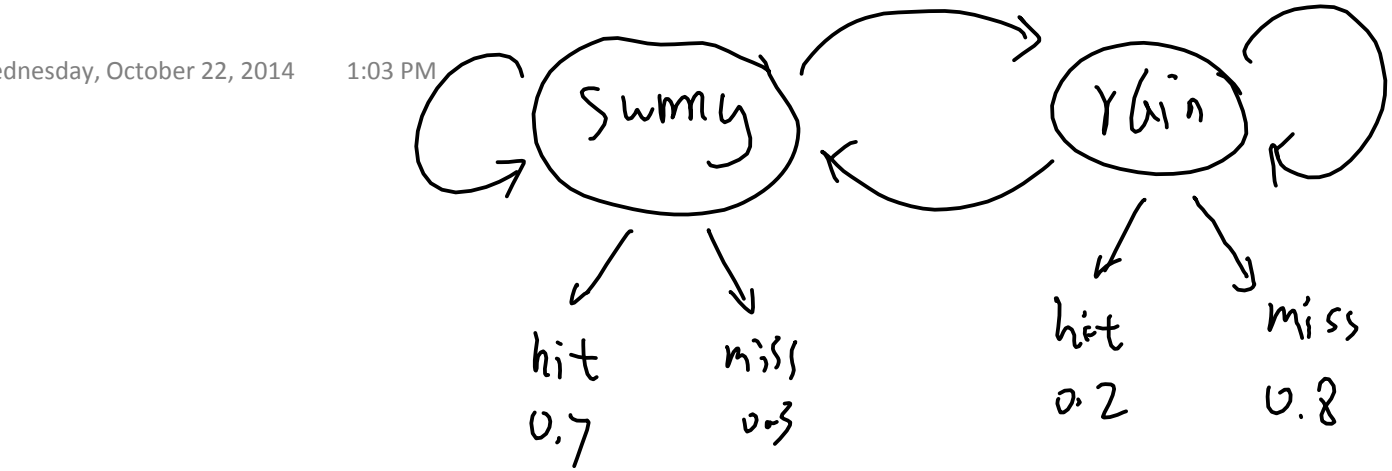
$$A = \begin{bmatrix} P_{11}-1 & P_{12} & P_{13} \\ P_{21} & P_{22}-1 & P_{23} \\ P_{31} & P_{32} & P_{33}-1 \end{bmatrix}$$

$\pi \cdot A1 = [1\ 0\ 0]$

$\pi = [1\ 0\ 0] \cdot A1^{-1}$

$A1$

$$[\pi_1\ \pi_2\ \pi_3] \begin{bmatrix} 1 & P_{12} & P_{13} \\ 1 & P_{22}-1 & P_{23} \\ 1 & P_{23} & P_{33}-1 \end{bmatrix} = [1\ 0\ 0]$$


Sunny
Rain
hit
0.7
miss
0.3
hit
0.2
miss
0.8