

Review of Markov Chain Model

C5 A4 B3

↓

C4 B4 D3

↓

C6 D4 C4

↓

C5 A4 B3

↓

C4 B4 D3

↓

A2 B1 C1

↓

C6 D4 C4

S₁

↓

S₂

↓

S₃

↓

S₁

↓

S₂

↓

S₄

↓

S₃

$$\begin{matrix} & S_1 & S_2 & S_3 & S_4 \\ \begin{matrix} S_1 \\ S_2 \\ S_3 \\ S_4 \end{matrix} & \begin{bmatrix} 0 & 2 & 0 & 0 \\ 0 & 0 & 1 & 1 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix} \end{matrix} \rightarrow$$

$$\begin{matrix} & S_1 & S_2 & S_3 & S_4 \\ \begin{matrix} S_1 \\ S_2 \\ S_3 \\ S_4 \end{matrix} & \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1/2 & 1/2 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix} \end{matrix}$$

make this matrix row-stochastic

$$\begin{matrix} & S_1 & S_2 & S_3 & \dots & S_{n-1} & S_n \\ \begin{matrix} S_1 \\ S_2 \\ S_3 \\ \vdots \\ S_{n-1} \\ S_n \end{matrix} & \begin{bmatrix} & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \end{bmatrix} \end{matrix}$$

on a
large
scale



Model Planning of Markov Chain

**But we need
data. . .**