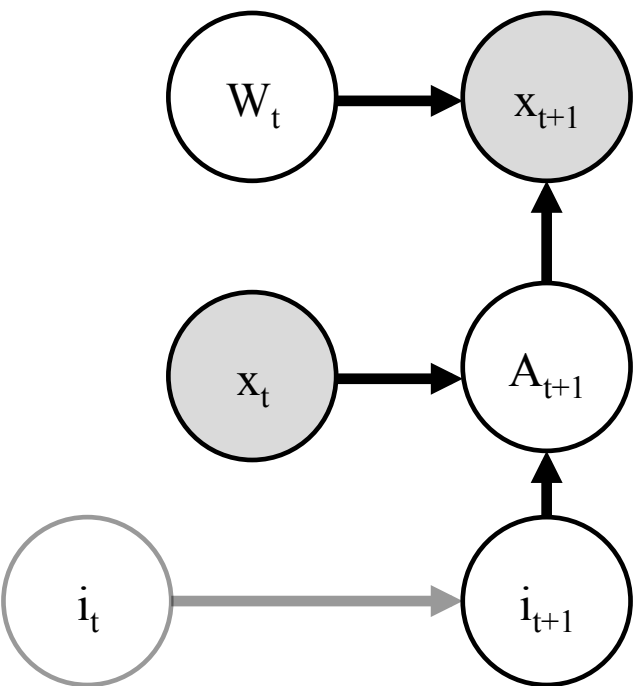


GMM+HMM

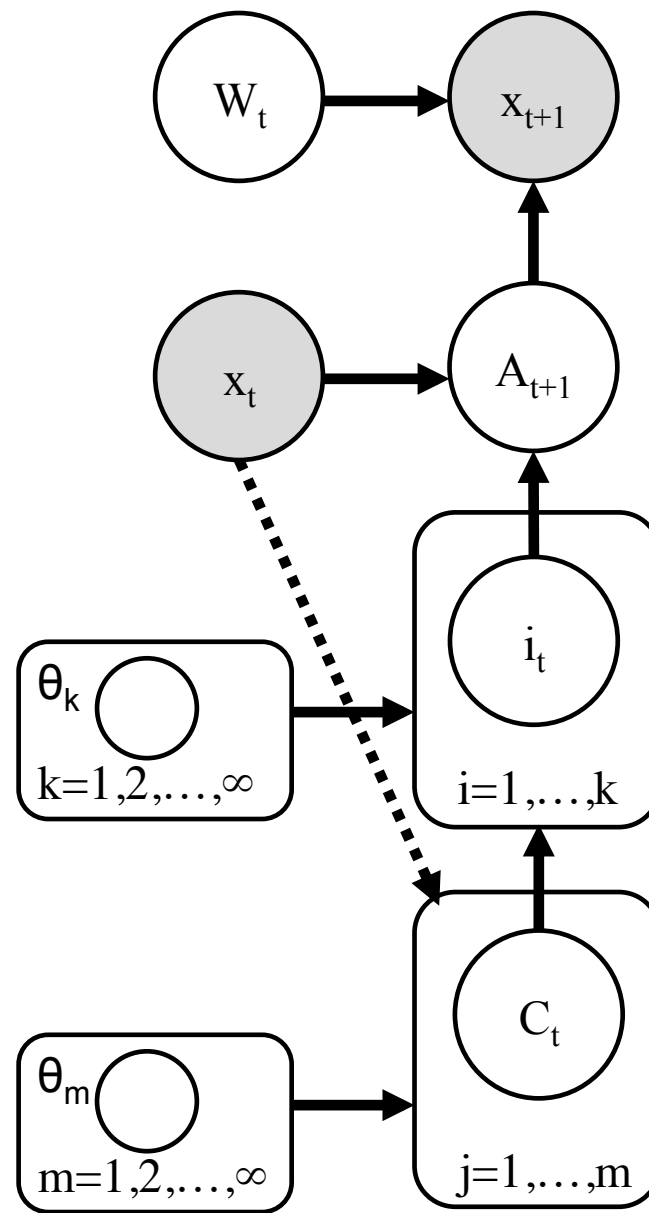


Observations
 $x_{t+1} = A_{t+1} \cdot x_t + W_t$

Regimes
 $A_{t+1} \in \{A^{(i)}\}_{i=1,\dots,k}$
 $i_{t+1} \sim \text{cat}(\theta, k)$

Transitions
 $i_{i+1} \sim p(i_{t+1} \mid i_t)$

TSC



Observations
 $x_{t+1} = A_{t+1} \cdot x_t + W_t$

Regimes
 $A_{t+1} \in \{A^{(i)}\}_{i=1,\dots,k}$
 $i_{t+1} \sim \text{cat}(\theta, k)$
 $\theta_k \sim DP$

Transition State Clusters
 $p(i_t \neq i_{t-1}) \sim p(x_t \mid C_t)$
 $C_t \sim GMM(\{\mu\}_j, \{\Sigma\}_j)$
 $j = \{1, \dots, m\}$
 $\theta_m \sim DP$