

BN structure



Asia	Xray	...	Dysp
no	no	...	no
no	no	...	no
no	yes	...	no
no	no	...	no
...	...	...	...

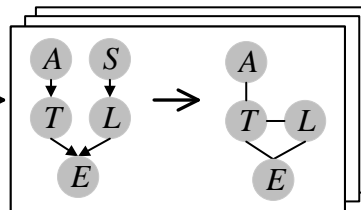
Input

## Candidate Generation

## Search Space Reduction

$\{Tub, Asia, Either, Lung\}$   
 $\{Smoke, Lung, Bronc\}$   
 $\{Lung, Smoke, Either, Tub\}$   
 $\dots$   
**MBs**

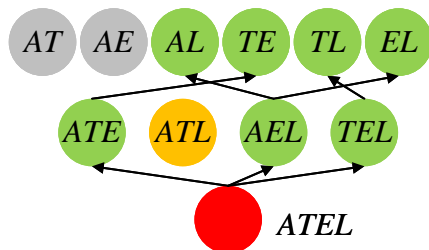
## Structure Pruning



$Asia, Either, Lung \rightarrow Tub$   
 $Either, Tub \rightarrow Lung$   
 $Either, Lung \rightarrow Tub$   
 $\dots$   
**cAFDs**

## AFD Search

## Count Generation



● saved      ● pruned  
 ● cleared    ● unknown state

States of sample counts

## Branch-and-Bound Algorithm

## Current cAFD

Asia, Lung  $\rightarrow$  Either

$\hat{s}(A, L; E)$  is lower than  
 the current highest  
 SMI score.

$Tub, Lung \rightarrow Either$   
 $Smoke \rightarrow Bronc$   
 $Asia \rightarrow Tub$   
 $\dots$

Output

Puring  
 $Asia \rightarrow Either$   
 $Lung \rightarrow Either$