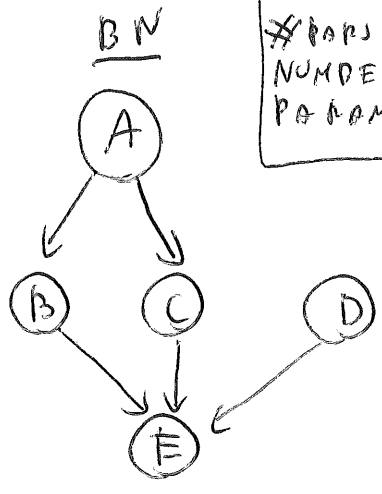


BN 21 SEP 2016



#PARS = NUMBER OF PARAMETERS

Q1 $P(A, B, C, D, E) =$
 $= P(E|B, C, D) P(D|A) P(C|A) P(A) P(D)$
 #PARS $\rightarrow 8 + 2 + 2 + 1 + 1$
 $= 14$

NOTE IF NOT BN $2^5 - 1 = 31$

Q2 NOISY-OR $\Rightarrow P(E|B, C, D) = P(E|B) P(E|C) P(E|D)$
 #PARS FOR NOISY-OR = 3

#PARS FOR BN = $3 + 2 + 2 + 1 + 1 = 9$

Q3 $P(D | \overbrace{C, E}^{(a)}) = P(D | A, B, C, E) ?$ NO

MARKOV BLANKET FOR D MB(D) =

PARENTS \cup	CHILDREN \cup	CHILDREN'S PARENTS
$\{\emptyset\}$	$\{E\}$	$\{B, C\}$

$B \in MB(D)$ BUT $B \notin (a)$ $= \{B, C, E\}$

NOTE

LOCAL SEMANTIC STATE THAT
 NO PARENT \leftarrow $P(D) = P(D | \overbrace{A, B, C}^{NOW DESCENDANT})$ HOWEVER THIS IS DIFFERENT THAN
 $P(D | C, E) = P(D | A, B, C, E)$ BECAUSE HAVING C AND E
 AS EVIDENCE CHANGES THE STATEMENT (I.E., HAVING
 AND E AS EVIDENCE MATTERS)